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THESIS

**TRANSFORMATIONAL BUDGET CONSIDERATIONS IN
PURSUIT OF THE TOTAL FLEET CONCEPT**

by

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June 2006

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**TRANSFORMATIONAL BUDGET CONSIDERATIONS IN PURSUIT OF THE
TOTAL FLEET CONCEPT**

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ABSTRACT

Growing world-wide commitments and potential naval threats in the future will challenge the U.S. maritime forces to become more integrated and interoperable. The Total Fleet Concept calls for a maritime force for the nation that essentially combines the assets and unique capabilities of each maritime agency available to the U.S. government and forms a scalable force that can be employed around the globe to accomplish missions in the national interest.

The U.S. Navy is the preeminent maritime power in the world. However, it has concentrated almost exclusively on maintaining its capability at the Blue-water level of operations. In light of the emerging asymmetrical threat from non-peer competitor forces, the Navy has embarked on a stated program of building up its littoral and low-level regional capability in order to engage these adversaries in their own environment.

This thesis studies the Navy's budget requests of the Future Years Defense Program. It also examines whether these budget requests and the long-range 30-year shipbuilding plan is leading to the transformational Fleet that is envisioned by the Total Fleet Concept, or is a continuation of the predominantly Blue-water operations focused Fleet and the assets that accompany that strategy.

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I. INTRODUCTION

A. BACKGROUND

The current force structure of the U.S. Navy is built around a global power projection model based on nuclear aircraft carrier strike groups or amphibious expeditionary strike groups. Both compositions of naval forces include several classes of “Blue Water” ships, which are large, powerful, and expensive. The common design background for nearly all combatants included in the U.S. Navy of the early 21st Century is that they were built for global operations against the now-defunct naval power of the former Soviet Union.

The present environment that the U.S. Navy operates in lacks the large opposition force that it was designed to fight against. Today’s enemy in the Global War On Terrorism (GWOT), in many cases, requires a naval force far different from the force that is the mainstay of U.S. naval power. The Fleet requirements for future combat operations will need to be met by a fleet that is more scalable to the level of the threats faced by the U.S.

From this idea of a scalable force, be it a current Carrier Strike Group (CSG), independently steaming frigate, or a 30’ river patrol boat, came the concept of an all-encompassing force which combines the assets and capabilities not only of the U.S. Navy, but the maritime assets of all agencies of the U.S. government. The Naval War College, as part of its Strategic Studies Group XXIV report, put forth the Total Fleet Concept (TFC) as the roadmap towards a fully interoperable combination of all the maritime force capabilities within the U.S. By standardizing training, platforms, equipment, procedures, and Command and Control protocols, the TFC’s goal is to improve operational agility while reducing unnecessary costs.¹

The operational commitments the Navy has in 2006 are no less than in years past, although the size of the Fleet is now 281 deployable battle force

¹ Naval War College Strategic Studies Group XXIV Quick Report, p. 94

ships,² which is the smallest Navy Fleet since before World War II. The TFC is a recognition of this fact and that the Navy will need to develop a new way of approaching its world-wide and homeland security responsibilities. Resources to maintain the Navy's coverage of all mission areas are under increasing pressure as the operational and procurement costs of transformation toward a new force rises continuously throughout all branches of the Department of Defense (DOD). The Navy can't afford to waste resources on redundant systems or capabilities that can be found in other DOD branches and/or other Government agencies.

The vision of the TFC is similar to Admiral Michael Mullen's (Chief of Naval Operations (CNO)) comments to the Surface Navy Association, 18th Annual National Symposium, held in Arlington, Virginia on January 10, 2006, relating on how to patrol the world's oceans effectively in the future:

"You may have heard me talk about the 1,000-ship Navy, about a world fleet of like-minded navies and coast guards teaming up in a sort of global neighborhood watch," CNO explained. "People realize our fates are lashed together now more so than at any other time in history."

Mullen said he believes maritime cooperation must extend beyond this, and include outside agencies, governmental and nongovernmental, and the Navy's sister services, the Marine Corps and Coast Guard.³

The TFC is a combination in the same vein as the 1000-ship Navy alluded to by ADM Mullen, although, the TFC applies the concept to a national fleet of maritime forces within the U.S. The goal of the TFC is that if it floats, flies, submerges or operates in the maritime commons, it should be connected as one Total Fleet.⁴

B. OBJECTIVE

The purpose of this thesis is to examine what impact the pursuit of the Total Fleet Concept will have on future Navy budgetary vision as it follows either a traditional or transformational path to meeting the mission requirements for the next 30 years.

² Status of the Navy, 10 March 2006, www.chinfo.navy.mil

³ CNO Speaks at SNA Symposium, www.navy.mil, Navy Newsstand, 11 Jan. 2006 (Last accessed Jan. 2006)

⁴ Naval War College Strategic Studies Group XXIV Quick Report, p. 97

C. RESEARCH QUESTIONS

1. Primary Research Question

- To what extent do the FYDP in the next budget cycle and the 2006 Quadrennial Defense Review lead towards the future Navy evolution to the Total Fleet Concept, to be implemented within the next 30 years, or are they a continuation of the traditional Blue-Water Fleet?

2. Secondary Research Questions

- What steps are necessary to implement the Total Fleet Concept?
- Do the 2006 QDR and the FY 2007 30-year shipbuilding plan support a future vision of the TFC?
- Is the National Fleet Policy a blueprint for the larger structure envisioned by the TFC?
- Is there fiscal coordination between the U.S. Navy's and the U.S. Coast Guard's budget planning of future systems, and if so, is it a model for an expanded TFC program?
- Do the Littoral Combat Ship (LCS) and the USCG Deepwater cutter program complement each other or are they stovepipe developments within their respective services?
- Is the Navy Expeditionary Combatant Command (NECC) Riverine Group a prototype for the new units required for the TFC?
- How does implementation of force structure changes within the TFC affect stakeholders among the various agencies involved?

D. SCOPE OF THESIS

This thesis examines and analyzes the known budget issues that could be affected by advancing the notion of the TFC. There are endless paths that could be followed to expand the level of analysis associated with the TFC, however,

this thesis focuses on the analysis of current programs and budget projections to determine if the TFC is feasible for the structure of the Navy over the next 30 years.

E. METHODOLOGY

Various research methods were used to acquire data and gain insight on the Navy's future plans process. The following methods were employed:

1. Published Material Searches

Multiple sources of published material were utilized to compile a database of background documentation and future projections, as they related to the implementation of programs that could evolve into the TFC. Defense magazine and journal articles were a key source of background data and previous research, especially in the areas of Navy platform transformation and the U.S. Coast Guard's Integrated Deepwater System (IDS) program. Internet sources were used to gather information and data from Government and government-related research and analysis organizations. The Congressional Research Service was a prime source of published reports on many aspects of current and future Navy mission and platform planning.

2. Subject Matter Experts

Several individuals, current and retired military, industry analysts, and Government researchers, were utilized for their in-depth knowledge of maritime programs budgeting issues concerning the Navy and U.S. Coast Guard (USCG). Many are currently involved in research and reporting organizations which specialize in naval issue. The primary means of data gathering from these individuals was via e-mail, although telephone discussions were used to get more specific details on particular items within their areas of expertise.

3. Direct Documentation

Contact was made with the Naval War College to obtain background information and research material that formed the basis for the TFC in the NWC Strategic Studies Group Report XXIV.

F. ORGANIZATION OF THESIS

Following this Introduction, Chapter II examines the National Fleet Policy and the current programs that are potential building blocks to that policy's implementation. Chapter III is a more in-depth analysis of the TFC and what it describes for the future fleet. Chapter IV is an analysis of the budgeting impact of implementing the TFC. Chapter V presents conclusions and recommendations regarding the budget and the TFC.

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II. NATIONAL FLEET POLICY IMPACT

A. REVIEW OF NATIONAL FLEET POLICY

The Total Fleet Concept (TFC) has its origins in two policy directives put forth by the U.S. Government. The National Strategy for Maritime Security (NSMS) was developed as part of National Security Presidential Directive 41, and the National Fleet Policy was published jointly by the Navy and U.S. Coast Guard (USCG). Both documents extol the philosophy that it is necessary for the country to defend its maritime interests with a multi-agency force of maritime assets available within the U.S. The TFC is the future implementation of the NSMS and is an expansion of the National Fleet Policy beyond the scope of the Navy and the USCG, although, those Services will provide the predominance of the assets for the TFC.

1. The National Strategy for Maritime Security

The Total Fleet Concept (TFC) owes a great deal of its ideological roots to the National Strategy for Maritime Security (NSMS), approved by President Bush in September, 2005. The theme of the TFC, to create a force of multiple DOD and other government maritime-capable agencies, is echoed in the NSMS. The NSMS's stated vision is to achieve maritime security for the people of the United States. "Security of the maritime domain can be accomplished only by seamlessly employing all instruments of national power in a fully coordinated manner...Maritime security crosses disciplines, builds upon current and future efforts, and depends on scalable layers of security to prevent a single point of failure."⁵ Within the NSMS, five strategic actions are called for to achieve the objective of US maritime security. Of the five, the fourth strategic action, titled "Deploy Layered Security," closely ties the NSMS to the common themes within the TFC, and provides substantial supportive relevance to the development of the TFC in the Navy's future.

⁵ National Strategy for Maritime Security, September 2005, National Security Presidential Directive (NSPD-41)/Homeland Security Presidential Directive (HSPD-13), Dec. 21, 2004

The Department of Homeland Security, the Department of Defense, and the Department of Justice, as well as the Department of State when diplomatic activities are required, will lead the United States' efforts to integrate and align all United States Government maritime security programs and initiatives into a comprehensive, cohesive national effort of scalable, layered security. This includes full alignment and coordination with appropriate State and local agencies, the private sector, and other nations.⁶

The NSMS recognizes the importance of a broad spectrum of maritime forces drawn from the U.S. Armed Forces as well as national, regional, State, and even local law and regulatory enforcement agencies. The Strategy defines the areas of concern for maritime security from the high seas to inland rivers, ports and waterways. The foundations for the TFC can be found in the NSMS's philosophy for integration of disparate maritime forces:

- “Recognizing the critical importance of interoperability, maritime security actions at the operational and tactical levels will be based on a network-centric approach that employs resources, as needed, from multiple agencies - primarily from the Department of Homeland Security and the Department of Defense – including surveillance and reconnaissance assets, aircraft, ships, boats, land units, and shore support facilities, all linked by an operational information network.
- Wherever feasible and operationally effective, agencies should co-locate in multiagency centers to facilitate direct interaction and efficient use of limited resources. Additionally, concrete and well-defined coordination protocols and communication mechanisms including procedures for operating jointly to prevent and respond to threats, and for assigning lead agencies for both pre- and post-incident operations, will be implemented. The coordination protocols must also outline defined procedures for ensuring national execution of maritime security policy for specific threats or incidents, and more routine encounters where a multiagency response must be seamlessly coordinated.
- Integrated planning and effective management of agency resources - Federal, State, and local - are essential for an effective response.

⁶ National Strategy for Maritime Security, September 2005, National Security Presidential Directive (NSPD-41)/Homeland Security Presidential Directive (HSPD-13), Dec. 21, 2004

Therefore, agencies will also share training, planning, and other resources, where practical and permissible, to standardize operational concepts, develop common technology requirements, and coordinate budget planning for maritime security missions

- Acquisition and logistics processes must support the continuous assessment of all requirements to optimize the allocation of appropriate resources and capabilities. Cooperative research and development efforts, coupled with reformed acquisition processes with coordinated requirements, funding, and scheduling, along with management, will identify unmet and emerging needs.”⁷

2. The National Fleet Policy

Following the direction of the National Strategy for Maritime Security, the Navy and USCG have joined together to promulgate their own version of the coordination efforts described within the NSMS. Evolving from its initial publication in 1998, the National Fleet Policy is the Navy and USCG’s jointly-approved statement of direct support for the NSMS. The Total Fleet Concept (TFC) again owes a great deal of its ideological roots to the National Fleet Policy. The National Fleet Policy Statement, as presented in Appendix A, is a joint policy agreement between the U.S. Navy and the U.S. Coast Guard to:

coordinate, to the extent permitted under existing statutory authority, research and development, acquisitions, information systems integration, resource-ing, force planning, as well as integrated concepts of operations, intelligence and information, logistics, training, exercises, and deployments. The Coast Guard and Navy will work together to plan, acquire and maintain forces that mutually support and complement each Service’s roles and missions.⁸

The idea behind the National Fleet Policy is one which is meant to take advantage of the inherent strengths each Service brings to the table and combine them for a more capable force. The intent of the National Fleet Policy is to broaden the asset base available to a Combatant Commander when faced

⁷ National Strategy for Maritime Security, September 2005, National Security Presidential Directive (NSPD-41)/Homeland Security Presidential Directive (HSPD-13), Dec. 21, 2004

⁸ National Fleet: A Joint Navy/Coast Guard Policy Statement, Mar. 3, 2006

with tactical situations that demand full flexibility and the application of the proper level of response using those forces at his disposal.

The integration of capabilities between the Navy and USCG is meant to act as a force multiplier when the two forces combine their efforts. In the operational arena, the Navy brings superior firepower, numerical strength in surface, air and subsurface units, and warfighting doctrine that spans the gambit from peacetime displays to global warfare against nation-state threats. The USCG brings the statutory authority of law enforcement, environmental responsibility, and multi-mission tasking for numerous operations other than war, as well as a smaller-scale operational relationship with maritime forces worldwide.

In order for the National Fleet Policy to function in practice, the policy statement directs the Navy and the USCG to develop and maintain complementary forces that can be called upon to assist the other Service when the mission need arises. The key to this concept of mutual support is in the interoperability of the Navy and USCG in all mission areas, from peacetime operations, homeland security, crisis response and wartime tasks.

Vital to the task of interoperability is the co-development of C4ISR (command, control, communications, computer, intelligence, surveillance, and reconnaissance) systems that will integrate the Command and Control nodes of each Service and tie their respective mission platforms into a coordinated network. Along with the integration of a common Command and Control (C2) strategy, the National Fleet Policy strongly supports the maximum possible development of complimentary budget plans that will acquire assets that are mutually supportive of the individual and common goals of each Service's roles and missions. The Policy stresses the on-going acquisition of the Navy's Littoral Combat Ship (LCS) program and the U.S. Coast Guard's Integrated Deepwater System (IDS) as two programs that complement each other by joining the requirements of developed Navy capabilities with those of maritime law

enforcement and coastal defense. The design and implementation of both programs is intended to maximize interoperability between the Services.

The National Fleet Policy does not advocate the combination of the LCS and IDS programs. The joint policy statement makes clear that the current position of each Service is that the two programs will pursue independent platform design and construction. This is reasoned as a better way to support the industrial shipbuilding base and to encourage the options available for possible export markets for either the LCS or the various cutters included in the IDS plan. The mission capabilities requirements that each Service desired also has led to incompatible Key Performance Parameters being developed for the LCS and the larger cutters of the IDS program.

B. NAVY PROGRAMS

The Navy has two major programs in progress during early 2006 that will be future contributors to the National Fleet Policy's intent and stepping stones towards the ideas behind the TFC. The Littoral Combat Ship (LCS) program of a new generation of small "brown water" combatants and the stand-up of the Navy Expeditionary Combat Command (NECC) and its newly formed Riverine Force fall within the blueprint for the TFC. Both of these programs are designed for expansion beyond merely the Navy alone and as a group are positioned to become baseline units for consolidated maritime forces in the future.

1. Littoral Combat Ship

The Littoral Combat Ship (LCS) is a radical departure from the traditional Navy platform development over the last 50 years. Since the end of World War II, the Navy has increasingly concentrated on the development of surface units that are designed to support the carrier battle group concept of operations. Every major platform was designed and operated as a multi-mission platform capable of being integrated into the carrier-centric warfighting doctrine for large fleet "blue water" combat. With two minor exceptions to this operational plan (the small hydrofoil program of the 1970s and the coastal patrol Special Operations

support PCs of the 1990s), all surface combatants which entered the Fleet, through the present day DDG-51 program, were designed as large, multi-mission, open ocean vessels.

Analysis of the capabilities that the Navy could deploy in response to maintaining coastal access in a hostile environment was conducted in 1998 by the Naval War College and the Naval Warfare Development Command. A concept vessel known as the “Streetfighter” was hypothetically developed to advance the operational notion of a shallow water combatant that could perform mission tasks in a coastal environment that a present-day cruiser or destroyer would be inappropriate for. After a three-year debate over the merits of such a combatant and its place in the Navy, the CNO announced that a restructuring of surface combatant acquisition would include a new small warship designed for focused, shallow-water missions, called the Littoral Combat Ship.⁹

The LCS is intended to accomplish several identified missions where the Navy lacks strong shallow water capabilities. Three mission areas have been identified as its initial priorities; however, the ship is designed to be mission reconfigurable to a much larger set of possible tasking. The primary three mission areas are: anti-submarine warfare (ASW), anti-surface warfare (ASuW) against small boats, and mine warfare (MW). As operational and tactical development progress, added mission areas will include, but are not limited to: Special Operations Forces (SOF) support, high-speed logistics transport, maritime intercept operations (MIO), intelligence, surveillance and reconnaissance (ISR), and anti-terrorism/homeland security.

The LCS program is designed around the concept of mission system modularity. The ship itself is commonly referred to as a “seaframe,” much like an airborne asset is based on an airframe. The seaframe is a core system which services the basic needs for a warship to function: hull/seaworthiness, command and control, launch and recovery systems, and self-defense systems, like the gun and radar. The seaframe operations will be the responsibility of a core crew

⁹ “Small Combat Ships and the Future of the Navy,” Robert O. Work, Center for Strategic and Budgetary Assessments, www.csbaonline.org, Oct. 18, 2004 (Last accessed April 2006)

component. The number of officers and sailors that will comprise the core crew is estimated to be 40 personnel. Missions that can be accomplished by the core crew utilizing the seaframe alone are referred to as inherent missions.¹⁰

The true concept behind the LCS is the mission package systems, called modules, which will customize the LCS for a focused mission area. The initial mission package descriptions, as well as the inherent core missions, are contained in Appendix B¹¹. Mission modules are to be self-contained “plug and fight” systems that can be loaded on the LCS seaframe for whichever mission the ship is to be designated for. Modules may consist of control and sensor containers that install into a mission bay onboard, or could consist of systems that will operate off-board from the LCS, which will serve as a “mothership” for various unmanned mission vehicles. Due to the lack of a fully self-contained multi-mission configuration as part of the core seaframe, the key to battle space awareness will be accomplished via high-bandwidth connectivity with a wider battle network sensor net. Lack of onboard sensors will then be made up for by the ability to “see” what the battle network sensor net sees.¹²

Additional personnel associated with each mission module will join the core crew to complete the manning of the LCS. Total combined crew size will be approximately 75 personnel. In order to man the LCS in all necessary job skills, cross-training will be required of a majority of the crew members. The term “hybrid sailor” has been coined to describe the multi-tasking sailors of the future LCS force. In addition to the use of cross-training to reduce the total manpower requirement onboard, the Navy is investigating a manning augmentation system that will allow several administrative functions to be accomplished on shore and linked to the LCS crew via computer database.¹³

¹⁰ GAO Report, GAO-05-255, “Defense Acquisitions: Plans Need to Allow Enough Time to Demonstrate Capability of First Littoral Combat Ships”, Mar. 2005

¹¹ Ibid

¹² “Small Combat Ships and the Future of the Navy,” Robert O. Work, Center for Strategic and Budgetary Assessments, www.csbaonline.org, Oct. 18, 2004 (Last accessed April 2006)

¹³ “Littoral Combat Ship – Mix and Match”, Scott Truver, Jane’s Defense Weekly, Mar. 16, 2005

Several off-board systems will be part of the mission module configuration. The most obvious off-board capability will be the provision for up to two helicopters, performing missions in support of all three of the initial mission packages. Airborne mission functions can also be performed by the Fire Scout (RQ-8B) vertical take-off unmanned aerial vehicles (VTUAV), which will complement or replace the helicopter contingent. For ASuW, ASW, and MW, unmanned remote surface and subsurface vehicles are to be employed in various forms to increase the on-site tactical operational area and stand-off distance from potential threats.

The acquisition plan for the LCS is split between two shipbuilders, each developing a separate version of the LCS (specifications in Table 1). General Dynamics and Lockheed Martin each are to design and build two units under the initial Flight 0 procurement authorization (see Appendix D, Figures 4 and 5).

Features	General Dynamics¹⁴	Lockheed Martin¹⁵
Hullform	Trimaran	Monohull
Length	413 ft.	377 ft.
Draft	14 ft.	13 ft.
Displacement	2783 tons	3000 tons
Top Speed	50 knots	56 knots
Endurance (Sprint Spd)	1500 NM	1100 NM
Endurance (Transit Spd)	4300 NM	3500 NM
Mission Payload	210 tons	215 tons
Hangar Space	2 MH-60 & 3 VTUAVs; H-53 Lndg Capable	2 MH-60 or 1 MH-60 & 3 VTUAVs

Table 1. LCS Design Comparison

¹⁴ General Dynamics LCS website, www.gdlcs.com (Last accessed May 2006)

¹⁵ Lockheed Martin LCS website, www.lmlcsteam.com (Last accessed May 2006)

Four units of the Flight 0 configuration are being built, with evaluations to be performed to determine design refinements as the Flight 1 procurement is commenced. A determination on whether the Flight 1 and beyond units will be of one design or a continuation of the two separate designs has yet to be determined. A spiral development plan will be used to make improvements throughout the procurement process and to add new technologies as they become viable. Navy plans project a procurement of 56 LCSs by the completion of the program, although there are contingency discussions within the Navy that this number could be increased in later years, depending on whether the LCS mission set is expanded.¹⁶

2. NECC - Riverine Force

The new Navy Expeditionary Combat Command (NECC) officially stood up as of January 13, 2006¹⁷. The NECC is a combination of various commands that were spread throughout the Navy dealing with logistics, construction battalions (Seabees), coastal warfare small boat security units, and explosive ordnance disposal (EOD). To these units were added a totally new force, the creation of the Navy's first riverine combat force since the Vietnam War.

Riverine Group One is slated to be comprised of three squadrons of 12 river combat boats each. The Riverine Group will have approximately 700 total sailors assigned, who will be distributed across the three proposed squadrons. In naval warfare jargon, the Riverine Group will fill an operational gap in the Navy's mission area coverage for the so-called "brown water" environment ("blue water/green water" being the operation environments of the open ocean and coastal regions.) The riverine squadrons are intended for deployment to areas that are inaccessible to deeper draft warships, with missions including river patrol, troop transport, interdiction of illegal drug traffic, customs and law enforcement, control of river accessibility, and port security. The first mission of the Riverine Group will be to replace the Marine Corps' Small Craft Company,

¹⁶ CRS Report for Congress, RS21305, "Navy Littoral Combat Ship (LCS): Background and Issues for Congress", Ronald O'Rourke, Mar. 6, 2006

¹⁷ "Navy Expeditionary Combat Command Stands Up", Katrina Scampini, Navy News Service, www.news.navy.mil, Jan. 14, 2006 (Last accessed Feb. 2006)

which is standing down after 2006. Their current deployment includes river patrol on the Tigris and Euphrates Rivers, along with security patrols for various dams in Iraq.¹⁸

The actual types of boats to be used for the Riverine Group have not been finalized yet. Several options are being examined, including the small craft currently in use by the USMC (see Appendix D, Figure 11). Projected cost of each craft is estimated to be \$500,000 and they must be transportable using current airlift, such as the C-17.

C. U.S. COAST GUARD'S INTEGRATED DEEPWATER SYSTEM

The U.S. Coast Guard (USCG) is the smallest branch of the U.S. armed forces, but is considered the 12th largest naval force, by number of ships, and the 7th largest naval air force in the world.¹⁹ The USCG currently falls under the Department of Homeland Security (DHS) for administrative control, however, it works closely with the DOD, and in time of war, will fall under the Navy's operational control. The National Fleet Policy strives to build stronger ties between the USCG and the Navy by mandating cooperation on future system development.

The USCG has a wide array of missions assigned under its responsibility, both homeland and non-homeland maritime security, including ports and waterways and along coastlines, search and rescue missions, interdicting drug shipments and illegal aliens, enforcing fisheries laws, and responding to reports of pollution. The main force of assets that the USCG currently has at its disposal consists of nearly 90 cutters of various sizes and capabilities and nearly 200 aircraft, both fixed-wing and helicopters.

In the midst of the post-9/11 world, the USCG is being tasked with more responsibilities to cover the growing homeland security mission. Many of the assets that the USCG has are reaching the end of their projected service life. Both aircraft and surface platforms are suffering from increasing maintenance

¹⁸ "As NECC Stands Up, Navy Prepares Riverine Forces for 2007 Iraq Mission", Jason Ma, Inside the Navy, www.insidedefense.com, Jan. 23, 2006 (Last accessed Jan. 2006)

¹⁹ "Coast Guard", www.globalsecurity.org (Last accessed May 2006)

difficulties and the high costs of keeping the older platforms viable. The age of some aircraft and surface ships are leading to their becoming unsupportable by the logistics supply chain. Many of the parts to repair major systems are rapidly becoming scarce as the suppliers no longer manufacture them.²⁰

In order to halt the decline of the material condition of its deepwater assets the USCG has embarked on a recapitalization program called the Integrated Deepwater System (IDS). It's a 20-year plan with an estimated cost of between \$19 and \$24 billion. The deepwater area of operations addressed by the IDS is typically defined as beyond the normal operating range, approximately 50 miles from shore. The program is designed to replace legacy cutters with mostly new construction, while utilizing some present hulls with upgrades until the new cutters are budgeted fully and built. The air component of the plan, likewise, replaces many systems and upgrades the most capable legacy aircraft. New components added by the IDS will include unmanned aerial vehicles and a state-of-the-art command and control network.

Key to the success of the IDS is the replacement of the deepwater legacy cutters. Three new classes of cutters are being designed and built to meet the scalable mission requirements of the IDS (see Appendix D, Figure 7):

- National Security Cutter (NSC) – replaces High Endurance Cutters
- Off-Shore Patrol Cutter (OPC) – replaces Medium Endurance Cutters
- Fast Response Cutter (FRC) – replaces 110' Patrol Boats

A total of 90 new cutters are planned as the surface component of the IDS. The first NSC is scheduled for operational delivery in mid-2007, while the OPC and FRC are still in various stages of the design approval and authorization process. Each new class of cutter will also be able to launch either of two new small IDS craft, the Long-Range Interceptor (LRI) or Short-Range Prosecutor (SRP). These small craft will be utilized for security and interdiction / boarding operations.

²⁰ GAO Report, GAO-05-757, "Coast Guard: Progress Being Made on Addressing Deepwater Legacy Asset Condition Issues and Program Management, but Acquisition Challenges Remain", July 2005

The IDS is also upgrading the USCG air capability. New HC-130Js and upgraded HC-130Hs will maintain the long-range search mission, while a new aircraft, the CASA 235-300M²¹, is being acquired to take on the medium-range search mission. The USCG helicopter force will be upgraded with new avionics systems and service life extensions and a new Unmanned Aerial Vehicle (UAV) program is being developed. UAVs will be both high-altitude shore-based variants of the U.S. Air Force Global Hawk and a vertical take-off model for use on the NSC and OPC.

All IDS platforms are to be networked via the USCG's new C4ISR (command, control, communications, computer, intelligence, surveillance, and reconnaissance) system. This network will link shore, surface, and air units in a common tactical information system. Integration with the Navy and other government agencies is mandated under the IDS plan.²²

D. JOINT PROGRAMS / EXPERIMENTS

Two joint programs are being developed specifically to fill common mission needs among the Services. Sea Fighter is a Navy / Coast Guard program that represents new manning concepts with a mixed Service crew, as well as serving as a test-bed for new naval technology. The Joint High Speed Vessel (JHSV) is a joint Navy/Marine Corps/Army program which will provide the connector vessels for the sea base-to-shore link as part of the Navy's Sea Basing concept within the Sea Power 21 vision, as well as provide a new theater logistics vessel for the Army.

1. Sea Fighter

The Sea Fighter (FSF-1) is a new class of up-to-now experimental ships known as Littoral Surface Craft. It's designed to be a test-bed for technology to be employed in future surface combatants, as well as a joint manning concept ship. The Sea Fighter is a true joint crewed ship, with a Navy CO and a Coast Guard XO to lead a crew of 26 Navy and Coast Guard personnel.

²¹ Built by the European Aeronautics Defense and Space Company's (EADS) Spanish subsidiary Construcciones Aeronáuticas SA (CASA).

²² Integrated Deepwater System, www.uscg.mil/deepwater (Last accessed May 2006)

The ship is a bridge between the LCS and the Riverine Force boats. It has the capabilities and endurance similar to the LCS, and the shallow water draft and high speed capability to compliment the river patrol boats (see Appendix D, Figure 8). Specifications for the Seafighter are as follows:

Length	267 ft
Draft	12 ft
Displacement	1600 tons
Engines	2 diesels and 2 LM-2500 gas turbines
Speed	55 knots
Helo Landing Spots	2
Cargo Capability	up to 12 mission containers

Production cost of the single Sea Fighter vessel was approximately \$65 million. It is configured to mirror many of the mission tasks that are part of the LCS program, albeit on a smaller scale. A stern boat launch docking area is available for sending out a boarding team or an unmanned surface or subsurface craft for ASW, MW, or ASuW operations.

The ship is another prototype for the TFC in that the joint crew has to be multi-task cross-trained and takes advantage of the skill sets that each Service's personnel bring to the mission. The model of a small, multi-tasked crew is applicable to the future LCS manning situation, in particular.²³

2. Joint High Speed Vessel

The Joint High Speed Vessel (JHSV) program is a combination of previously independent programs run by the US Army and the Navy. Both the Army's Theater Support Vessel (TSV) and the Navy's High Speed Connector (HSC) programs were developed to meet the same mission need: rapidly moving combat forces from a logistics base to a less accessible location by sea. The primary feature of the JHSV is that it is a high-speed, shallow draft vessel with medium lift capability to transport conventional or Special Operations forces within a theater of operations.

²³ "New 'Sea Fighter' Ship Shakes Up American Admirals," James Dunnigan, www.strategypage.com, July 21, 2005 & "Multitasking Is Rule of Road for Sea Fighter Crew", Gidget Fuentes, Defense Daily, Aug. 22, 2005 & "Hull #S-144 – Sea Fighter", www.nicholsboats.com (Last accessed Mar. 2006)

The JHSV is one of the components of the Navy's Sea Basing concept and will be utilized to take personnel, equipment and material from the sea base platform to shore. Its shallow draft feature will allow it to access shore facilities that larger expeditionary transport ships could not. The JHSV will have a stern ramp for on/off-load of its cargo. The ship will also have a large helo deck for airborne transport operations or utilization for alternate mission capabilities, such as Mine Warfare (MW).

The Army, Navy and Marine Corps are leasing experimental versions of the JHSV from an Australian shipbuilder that specializes in high-speed catamarans used for car ferries (see Appendix D, Figure 6). The Army is using the *USAV Spearhead* in the Persian Gulf for intra-theater logistics movements, while the Navy is operating the *Joint Venture* and *Swift* in support of experimental MW operations, as well as tsunami humanitarian assistance and Hurricane Katrina relief efforts. The Marine Corps has gained experience at moving trial-run expeditionary force elements in the western Pacific using the *WestPac Express*.²⁴

The JHSV platform capabilities can be utilized for large sealift loads. The *WestPac Express* was able to transport 800 Marines, 60 ground vehicles, and 30 gear storage containers from Okinawa to Yokohama, Japan in 30 hours. Airlift of the same force could take up to 2 weeks, based on theater availability of Air Mobility Command assets. The JHSV also reduced load and unload times in the area where the expeditionary force was ready to operate, rather than movement from an airfield or deepwater port facility.

The JHSV "seaframe" could also be adaptable to many various missions, including MW Command and Control Center, Medical Support and Humanitarian Operations, and Anti-Terrorism/Homeland Security. The large helo deck and stern launch well-deck, give the JHSV capabilities to support multiple government agencies in their maritime mission areas.²⁵

²⁴ "US Sea Basing: Special Delivery", Scott Truver, Jane's Defense Weekly, Mar. 29, 2006

²⁵ "High Speed Vessel (HSV) Adaptability, Modularity and Flexibility for the Joint Force," www.nwdc.navy.mil/Concepts/Sea_Basing/ConceptsHSV.aspx (Last accessed Mar. 2006)

Current acquisition of the JHSV program is headed up by the Navy's Program Executive Office, Ships. The Army will cover all operational costs of its vessels once they are procured and provide all personnel for the vessels that they control. No plans are currently being pursued to operate the JHSV fleet as a jointly crewed vessel.

E. THE NATIONAL FLEET POLICY AND THE TFC

The National Fleet Policy as it stands is a cooperative agreement for the Navy and the USCG to operate together in the accomplishment of their missions. A form of the National Fleet Policy has been in effect long before the formal agreement was signed by the two Services. There have always been strong ties between the Navy and USCG, as demonstrated by Navy participation in the USCG's counter-drug operations in the Caribbean and USCG cutters supporting Navy 5th Fleet Maritime Intercept Operations (MIO) in the Northern Arabian Gulf.

The National Fleet Policy is already working in programs that enhance the interoperability of the USCG and the Navy. The outfitting of USCG cutters with Navy Type/Navy Owned (NTNO) equipment enables the USCG to seamlessly join forces with the Navy when joint operations are necessary. Future programs are being developed to equip and train the LCS and IDS cutters with common 57mm gun systems and surface search radar systems.

The TFC will take the National Fleet Policy to a broader level of interaction between not only the Navy and the USCG, but the full range of U.S. government agencies that operate in the maritime environment and participate in the Global War on Terrorism (GWOT). The TFC will become a memorandum of agreement between all federal maritime agencies to provide mutual support and encourage common program development.

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III. TOTAL FLEET CONCEPT

A. TOTAL FLEET CONCEPT INDEPTH

The Total Fleet Concept (TFC) is designed to address the problem posed by the fact that a single military service, the US Navy, can not fulfill all the capability and capacity requirements needed to address the full spectrum of future naval missions. The Total Fleet must be capable of being applied across a broad spectrum of challenges that the nation may face in the future, from Major Combat Operations (MCO) to national Homeland Defense missions. The TFC is an expansion of the current National Fleet Policy, taking it beyond the Navy and USCG, incorporating the other Department of Defense Services, as well as encompassing the maritime capabilities of other federal agencies.

The TFC encompasses scalable forces to enable a combatant commander to deal with threats of any size. The missions that the Total Fleet will be deployed against can be global in scope or can be down to interdiction of an individual person who has been identified as a threat. The TFC is designed to operate beyond the role of combat-related missions in order to encompass all aspects of maritime security in the defense of the nation, including law enforcement, interdiction of contraband, maritime safety, and domestic and foreign disaster relief operations.

The pursuit of the TFC may eliminate operational barriers to coordination between organizations and reduce the unnecessary costs associated with overlapping force capability. Standardization may be possible in the areas of training, equipment, procedures, and Command and Control systems.²⁶

The current U.S. Navy Fleet has been designed, procured and trained as a major combat force intended to engage in peer-to-peer levels of operations in the open ocean, i.e. the “Blue-water Fleet” environment, and to conduct strike warfare at a nation-state target level. In the arena of Major Combat Operations,

²⁶ “The Road to Total Fleet”, Strategic Studies Group XXIV working document, Naval War College, July 11, 2005

the U.S. Navy is practically unchallenged for dominance of the maritime battle space. The decline of the naval forces of the former Soviet Union and unwillingness and/or inability of Russia to economically maintain its forces at Soviet-era levels, has left the power projection / nuclear aircraft carrier-oriented U.S. Navy without an adversary of comparable capability. The growing Chinese navy is becoming a stronger regional force in eastern Asia, but is still, for the foreseeable future, a navy that will, at best, be a localized adversary. The Chinese navy's main combat power will reside in their submarine force and anti-ship cruise missile capability, not in power projection and distant blue-water operations.

In the Blue-water operational theater, the U.S. Navy is larger, by sheer warship tonnage, than the next 17 world navies...combined.²⁷ The U.S. Navy has slowly reduced the number of vessels in the Fleet over the past 20 years since the Reagan era "600-ship" navy period, and currently has 281 battle force ships.²⁸ This has not reduced the commitments that the Navy has been assigned and an increased operations tempo has been thrust upon it by the nature of the Global War on Terrorism (GWOT) / Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF). In this environment, it is still the dominant naval force in the world and fully able to fulfill its historical mission of maintaining sea lines of communication for commerce and power projection in order to benefit the nation.

The Navy's maintenance of the Major Combat Operations asset base is an ongoing process without compare in the world's navies. The CG-47 and DDG-51 classes, along with their follow-on platforms, DD(X) and CG(X), combined with the aircraft carrier and submarine force, are the dominant power projection warships in the world. Even at a reduced numerical size compared to the Reagan-era build-up, the combat power of the present Fleet is much greater than the Fleet of 20 years ago.

²⁷ "Winning the Race: A Naval Fleet Platform Architecture for Enduring Maritime Supremacy" brief, Robert O. Work, Center for Strategic and Budgetary Assessments, Mar. 1, 2005

²⁸ Fleet Size, Naval Vessel Register, www.nvr.navy.mil, Apr. 10, 2006 (Last accessed May 2006)

Platform \ Year	1989	2006
Aircraft Carrier Aimpoints	2430 (15 carriers)	7700 (11 carriers)
Surface Ship Battle Force Missiles	7133 (104 combatants)	7443 (70 combatants)
Submarines ASW / Land Attack Weps	2449 (89 SSNs)	2377 (53 SSNs & 4 SSGNs)

Table 2. Aimpoint Capabilities of U.S. Fleet²⁹

Table 2 illustrates the impact of increased capabilities in the areas of aircraft-launched precision guided weapons and surface and submarine Vertical Launch Systems (VLS). These technological improvements enabled the Fleet to increase combat power while at the same time reduce the number of platforms necessary to employ that power.³⁰

The blue-water battle space is covered by the current Navy profile, however, that is not where the current threat resides. The maritime threat associated with the GWOT does not fight on the open-ocean. Other than operating within the transportation shipping realm, the enemy forces in the GWOT are resident in the littoral waters of belligerent or failed states, or in territorial areas of weaker host countries that do not have the resources to combat them. Against this threat and within this operating environment, the U.S. blue-water fleet has little impact beyond the periphery. The strengths of the U.S. Navy are usually only brought to bear in missions that approach the Major Combat Operations scenario: Close Air Support (CAS) for ground forces and Direct Attack (DA), via manned aircraft or cruise missiles.

The following graphic (Figure 1) depicts the new operating environment that the Navy finds itself in today. The area of MCO is well taken care of by the

²⁹ "Winning the Race: A Naval Fleet Platform Architecture for Enduring Maritime Supremacy" brief, Robert O. Work, Center for Strategic and Budgetary Assessments, Mar. 1, 2005

³⁰ Other capabilities affected in the 1989 – 2006 timeframe: Mine warfare capability has begun migrating to the Navy Reserve Force, as have several of the FFG-7s. The FFG-7 class ships have had most of their surface-to-air missile capability removed, as well as consideration for removing the 76mm gun. Logistics ships were almost entirely transferred to the Maritime Sealift Command and designated as USNS ships. Amphibious forces remained roughly equal over the period.

current Blue-water Fleet assets. The three warfare areas where the Navy is not very well balanced are in Stability Operations, GWOT, and Homeland Security (HLS). By nature, they are all in the littoral, falling into the coastal (“Green-water”) and interior (“Brown-water”) maritime operating areas.

The New Operating Environment

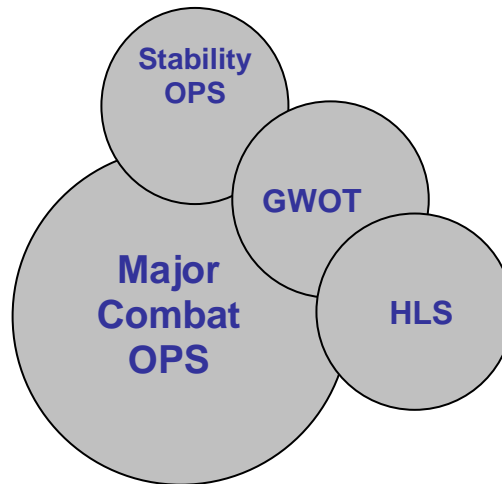


Figure 1. Navy Warfighting Areas³¹

The assets of the current naval force are not positioned well to combat the GWOT threat. Part of the method to combat the world terrorist threat is to build relationships with allies that can assist in the war effort. The primary surface force combatants in the Fleet are not suitable to form close liaison relationships with the navies of friendly host nations. Many nations would like to operate and train with U.S. forces, however, the U.S. Navy’s level of operations far exceed the capabilities of the nations that wish to conduct exercises with it. To alleviate this mismatch of capability level, the USCG has been utilized in the role of a peer-force provider when working with friendly nations whose naval forces are on a much smaller scale than even the smallest NATO-level navy.

In order to combat the array of threats that will present themselves in the next 20-30 years, the Navy will have to provide presence in the areas where the

³¹ “Navy 2035”, Strategic Studies Group XXIV working brief, Naval War College, slide 30

threat resides. In a forward projecting strategy, naval forces must be on-scene to combat or preempt the threat. Forward presence is the key to establishing the working relationships that will be necessary for the U.S. forces to be able to maintain access in threat regions.

The TFC moves U.S. maritime forces into the littoral regions where the Navy is now lacking strong capabilities. By leveraging the capabilities of all organizations the nation has at its disposal, the future combatant commanders will be able to apply the force necessary to meet the threats they face in their operational region.

The Navy itself is moving towards a broader capability with the introduction of the Littoral Combat Ship (LCS) (Appendix D, Figures 4 and 5). The LCS has been designed to operate in the shallow-water, coastal environment, however, it is still basically an extension of the Blue-water Fleet. At 3,000 tons, the LCS is still twice the size of many potential allied nations' largest corvette. In many respects, through the swapping of modular mission packages, the LCS is a slightly smaller replacement for the Perry-class guided-missile frigates (FFG-7). As the FFG-7 class is retired in the coming years, there will be pressure to utilize the LCS as a one-for-one replacement for the missions currently covered by the FFG-7s. The LCS alone is not the final answer to the Navy's entry into the littoral zone of operations.

The area in the TFC where the LCS still does not provide coverage is in the littoral region requiring smaller vessels. The USCG's Integrated Deepwater System (IDS) program is a model for the various platforms necessary to cover the changing levels of littoral operations. The USCG as a military service is designed as a littoral force. The combination of assets via the TFC will bring in the USCG's capabilities and the coverage provided by the IDS model. A comparison of the complimentary nature of the Navy and USCG forces as the battle-space is moved closer to the shore is contained in Figure 2. The USCG, with its many various sized vessels, provides broad coverage of the littoral operational zone. The Navy is bracketing both ends of the littoral spectrum with

the LCS and the Riverine Group in the Navy Expeditionary Combat Command (NECC).

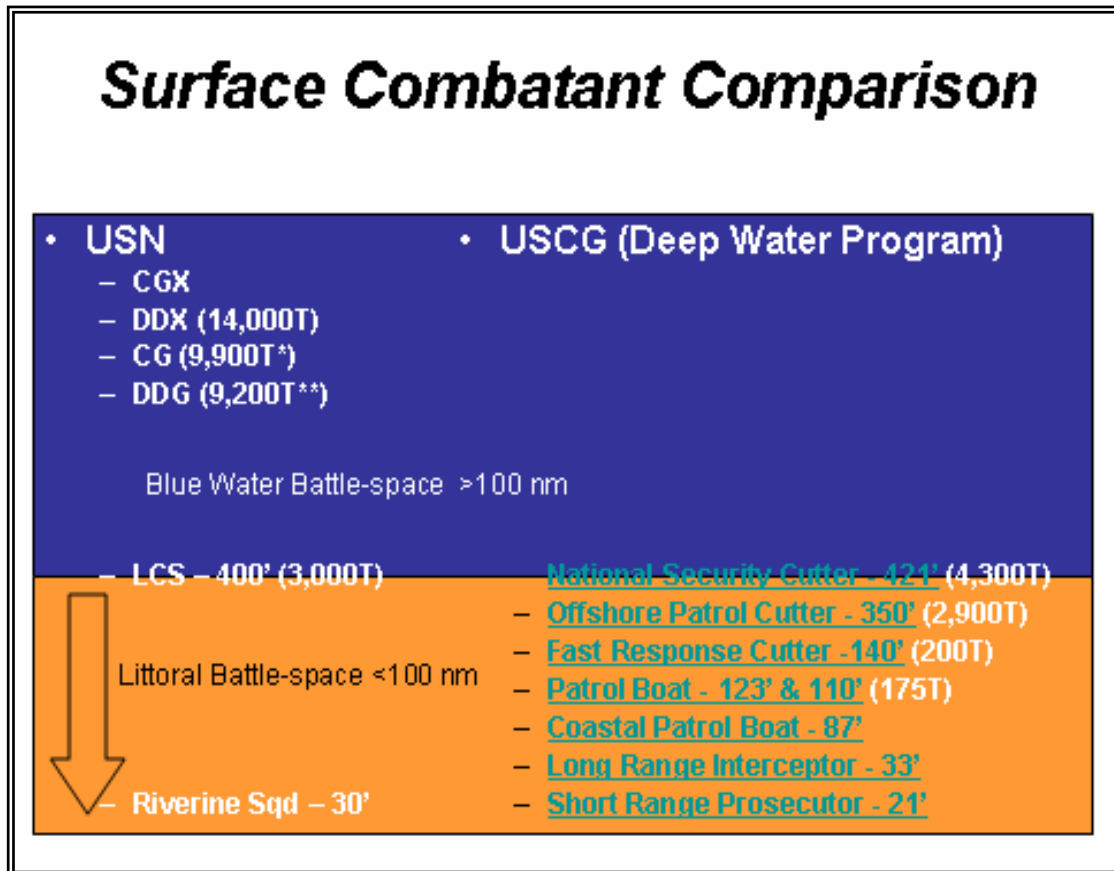


Figure 2. Future Mix of Major Navy and USCG Platforms³²

In order to achieve the TFC for U.S. maritime forces within the next 20-30 years, coordination must be planned between the various maritime forces. The TFC is not just a combination of naval assets to create a numerically larger force. The TFC is a process for leveraging the capabilities that exist or will exist shortly to produce economies of scale across the maritime Services. The TFC is based on the ideas of developing common systems and procedures, as well as integrating training and personnel among the different maritime Services. The process to achieve this goal of integration of forces will take the next 20-30 years

³² Adapted from "Navy 2035", Strategic Studies Group XXIV working brief, Naval War College, slide 32

to be fully accomplished. Organizational transformation will have to be performed in phases and be limited to realistic milestones along the way. The timetable for the TFC process will be re-visited later in this chapter.

B. ROADMAP TO TOTAL FLEET CONCEPT

How many assets does the United States have in its maritime inventory? The TFC at its core is a force larger than the U.S. Navy alone. If the Navy was able to fund and build all the assets, in all different sizes and capabilities, then there would be no need for a cooperative force under the TFC umbrella. Beyond the Navy, a large number of maritime assets exist that are potentially at the disposal of a combatant commander under a TFC force. The question is: what are all the assets currently or in the planned future of the U.S. maritime forces?

1. Navy Assets

The U.S. Navy is the prime asset base force for the foundation of the TFC. It is one of the three major branches of the U.S. Armed Forces and has a FY 2006 budget of \$122.9 billion³³. This provides for a very large infrastructure as well as the necessary procurement for maintaining the largest combat fleet in the world. The previously cited size of the U.S. Navy, in terms of battle force ships, is 281 vessels. The Chief of Naval Operations formally submitted a plan to Congress for a future naval force structure of 313 battle force ships as an accompaniment to the 2006 Quadrennial Defense Review. The target timeframe for achievement of the 313-ship force structure is to be less than 15 years into the future: FY 2020.³⁴ The 313-ship breakdown (with the current Fleet distribution as a comparison) is as follows in Table 3:

³³ "Department of Navy 2007 Budget Submission", PPT brief presented by RADM Stan Bozin, Director, Office of Budget, Office of the Assist. Secretary of the Navy; Financial Management and Comptroller, Mar. 2, 2006, slides 3 & 5

³⁴ "Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007", Department of the Navy, Feb. 2006

Type/Class	Current 2006 Fleet	313-Ship Fleet Proposal
Aircraft Carriers (CVN-68/CVN-21s)	12	11
Submarines	72	66
Ballistic Missile Submarines (SSBNs)	14	14
Cruise Missile Submarines (SSGNs)	4	4
Attack Submarines (SSNs)	54	48
Surface Combatants	100	143
CGs/CG(X)s	22	19
DDGs/DDG(X)s	48	62
DD(X)s	0	7
FFG-7s	30	0
Littoral Combat Ships	0	55
Expeditionary Warfare Ships	36	43
Amphibious Landing Ships	36	31
Future Maritime Prepositioning Ships MPF(F)	0	12
Combat Logistics Force Ships	29	30
Support Vessels	32	20
Total Ship Battle Force (TSBF)	281	313

Table 3. Future Naval Force Structure³⁵

The 313-ship force structure does not take into account the entire U.S. Navy vessel count when determining the battle force numbers. The 313-ship force is representative of the Navy's Blue-water operations requirements. The LCS is a major portion of the surface combatant totals, however, one of its primary mission areas is Mine Warfare (MW) and a secondary is Special Operations Patrol and Support. Leading up to the realization of the 313-ship force, there are still eight dedicated MW vessels in the Fleet³⁶ as well as up to 13 Cyclone-class patrol craft (see Appendix D, Figure 13). The newly established

³⁵ Fleet Size, Naval Vessel Register, www.nvr.navy.mil, Apr. 10, 2006 (Last accessed May 2006) and "The 313-Ship Fleet and the Navy's 30-Year Shipbuilding Plan", Robert O. Work, Center for Strategic and Budgetary Assessments, Mar. 30, 2006, Adapted from Figure 1, p. 2

³⁶ "Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007", Department of the Navy, Feb. 2006, Table 5

Riverine Group One will have three squadrons of 12 river combat patrol vessels, also (Appendix D, Figure 11).

The TFC is by definition a scalable force structure, covering the war fighting battle space from the Blue-water to the Brown-water area. By taking into account the Navy's spread of combat capability as envisioned by the TFC, the Navy's true contribution to the TFC is approximately 360 vessels. Inclusion of numerous small patrol craft that are part of the Navy Expeditionary Combat Command's (NECC) Naval Coastal Warfare Groups and the Special Operations Command (20 82' Mk V Special Operations Craft) could theoretically push the Navy's total over 400 vessels.

2. Coast Guard Assets

The USCG is the smallest of the U.S. Armed Forces and actually falls under the managerial control of the Department of Homeland Security, rather than the Department of Defense (in wartime, the USCG does become operationally subordinate to the Navy³⁷.) The USCG was budgeted at \$8.1 billion for FY-06, of which \$944 million was allocated for the Integrated Deepwater System (IDS) re-capitalization program³⁸. The IDS program is estimated to cost between \$19-24 billion over a 20-25 year period³⁹. The IDS program is slated to replace 93 aging cutters and replace or modernize 207 maritime aircraft. The surface ship procurement planned for the IDS program is shown in Table 4.

In addition to the platforms directly affected by the IDS program (Appendix D, Figure 7), the USCG currently has 65 additional patrol boats that are of recent construction and not covered in the Deepwater plan. These 87' Coastal Patrol Boats are stationed throughout the U.S. as local area patrol, safety, and law enforcement vessels. Their mission and capability contribute to the USCG's

³⁷ Factfile – National Defense, <http://www.uscg.mil/hq/g-cp/comrel/factfile/index.htm> (Last accessed Apr. 2006)

³⁸ "U.S. Coast Guard 2007 Budget in Brief ", www.uscg.mil, Feb. 2006 (Last accessed May 2006)

³⁹ CRS Report for Congress, RS21019, "Coast Guard Deepwater Program: Background and Issues for Congress", Ronald O'Rourke, Jul. 22, 2005

mission in the TFC and are also included in Table 4. Not included in the Table 4 numbers, but still part of the IDS program are the small boat Long Range Interceptors and Short Range Prosecutors. These craft are being procured for carriage onboard the National Security Cutters and Offshore Patrol Cutters. Other vessels not included in the totals are the USCG's icebreakers, buoy tender ships, and several hundred smaller, coastal search and rescue boats. The combined total of significant USCG surface assets, for the TFC, numbers 156 vessels. This could be increased by the most capable 372 fast, sea-going small boats for a grand total of 528 vessels.

Platform Type	Quantity
Deepwater National Security Cutters	8
Deepwater Offshore Patrol Cutters	25
Deepwater Fast Response Cutters	58
Legacy Coastal Patrol Boats	65
Total	156

Table 4. USCG Future Force Structure; Deepwater and Legacy⁴⁰

3. Army Assets

The U.S. Army would not normally come to mind as a segment of the U.S. Armed Forces with assets to add to the TFC. In fact, the U.S. Army has a large force of vessels focused on amphibious warfare and watercraft logistics in support of theater operations. Much of the Army's waterborne forces are designated for the movement and sustaining of equipment from strategic sealift

vessels to ashore combat forces. The Army's watercraft fleet is comprised of 79

⁴⁰ CRS Report for Congress, RS21019, "Coast Guard Deepwater Program: Background and Issues for Congress", Ronald O'Rourke, Jul. 22, 2005 and data from www.uscg.mil/datasheet (Last accessed May 2006)

named vessels, divided among Logistics Support Vessels, tugs, and Landing Craft Utility boats⁴¹.

While not a direct collection of assets to be included in the TFC, the Army Watercraft program is going through a restructuring period and will be replacing many older logistics vessels with a fleet of Joint High Speed Vessels (JHSV) (Appendix D, Figure 6). The TFC will benefit from the inclusion of these JHSV assets since they are ideally designed to compliment other maritime assets in the littoral combat environment. They will make the connection from a Green-water arena to a Brown-water operation. They will also be in a position to perform as a jointly manned asset, operating as like assets to Navy and USMC versions of the JHSV. Army plans are for the acquisition of approximately 20 JHSVs⁴².

4. Other Federal Agency Assets

Maritime assets available to the TFC are not limited to the Navy, Army, and Coast Guard. Border security, law enforcement, and oceanic surveillance are vital missions for the Total Fleet, whether pre-hostility reconnaissance or observations made to enforce national policies dealing with U.S. sovereignty and/or economic threats. The USCG has been the lead federal agency for border security within the Department of Homeland Security (DHS). As a military, maritime, multi-mission service, the USCG has all the assets and resources associated with a world-class naval service, but they are not the only agency within DHS with assets to provide to the TFC.

The Customs and Border Patrol (CBP) has both air and maritime assets that are all dedicated to border security and the prevention of terrorist acts or infiltration. In a consolidation effort, as of October 2004, the air and maritime assets from the Immigration and Customs Enforcement division were combined with the units of the Office of Border Patrol division to form a single reorganized division called CBP Air and Marine. CBP Air assets number 250 aircraft, including P-3 Airborne Early Warning aircraft and H-60 Blackhawk helicopters,

⁴¹ Army Vessels Registry, Office of Chief of Transportation, Ft. Eustis, Virginia, Mar. 6, 2006

⁴² "Theater Support Vessel Program", www.globalsecurity.org/military/systems/ship/tsv (Last accessed Apr. 2006) and conversations with Mr. Ray Aube, Army Watercraft Branch Chief, Material Systems Directorate, CASCOM, Apr. 17, 2006

making the CBP the largest law enforcement air force in the world. CBP Marine has 200 vessels of various types (Appendix D, Figure 12), from small powered utility boats to 39' high-speed Midnight Interceptors used to interdict so-called "go fast" boats favored by drug smugglers.⁴³

The operating environment for the CBP Air and Marine is within the coastal littoral and interior riverine zone. Its state-of-the-art communications and highly mobile tactical units form a coordinated force with close ties to other federal, state, and local military and law enforcement agencies. As part of the TFC, the CBP provides a large force to be utilized as a force multiplier in conjunction with the Navy and USCG in the homeland security/defense mission.

Some non-military government agencies are participants in the maritime environment, even without a force of dedicated maritime assets. The US Drug Enforcement Administration (DEA) is active in the prevention of illegal drugs from entering the US, from land, air, and sea access points. The DEA occasionally operates marine craft that have been acquired through the confiscation of assets utilized for illegal trafficking. In the context of being participants in the TFC, their use of occasionally available maritime assets does not constitute a notable contribution, however, the DEA works in local coastal regions with both the USCG and the CBP. DEA officers who have trained with the local USCG and CBP units are sent on detachments for specific operations in order to augment their law enforcement personnel. In this capacity, their personnel are part of the TFC framework of coordinated agencies. Future growth for the Navy in the homeland security mission area will likely require the Navy to coordinate with non-maritime related agencies, such as the DEA.⁴⁴

The National Oceanic and Atmospheric Administration (NOAA) is a maritime organization committed to oceanic surveying and research data collection. In the TFC, the NOAA fleet would add an additional 20 vessels dedicated to ocean patrol that would be networked with the other U.S. maritime

⁴³ CBP Air and Marine Overview, www.cbp.gov/xp/cgov/border_security/air_marine (Last accessed May 2006)

⁴⁴ Phone interview with Mr. Steve Robertson, Public Affairs, Drug Enforcement Administration, Apr. 17, 2006

forces and would be eligible to provide surveillance data contributing to homeland defense in non-combat areas, such as economic resource protection. NOAA vessels are open-ocean vessels with an average of 40 days endurance (Appendix D, Figure 10). The NOAA ships are commanded by a commissioned officer corps, under the Department of Commerce, however, they are considered members of the U.S. Armed Forces in time of war or national emergency.⁴⁵

5. Combined Total Fleet

The TFC leverages the quantity and capabilities of a broad base of maritime assets available to the nation. Each service has invested in a fleet of vessels that are specifically designed to meet its organization's specific needs. The Navy and USCG have invested in numerous platforms that address the multi-mission nature of their operational requirements. The Army, CBP and NOAA have very specific purposes for the maritime assets that each of those organizations have developed. As a combined force, the totals of all these maritime assets provides a vast capability if they were effectively coordinated into one force under the TFC. Table 5 presents the theoretical totals for the various DOD and non-DOD government agencies that would contribute assets to the TFC force.

Service	Total Vessels
Navy	400
USCG	528
Army	20
CBP	200
NOAA	20
Total	1168

Table 5. Potential Total Fleet Vessel Count

6. Timetable for Total Fleet

The adoption of the TFC as the operational structure of the U.S. maritime forces will not happen overnight. Many coordination evolutions will have to be put in motion in order to transform the nature of mission accomplishment by the

⁴⁵ National Oceanic and Atmospheric Administration, Marine and Aviation Operations website, www.omao.noaa.gov, (Last accessed Mar. 2006) and information utilized from the "Report of NOAA's Ship Platform Requirements FY03-FY12," Powerpoint Brief presented by CDR E.A. White (NOAA Ret.), Oct. 6-7, 2004

varied maritime forces that will be available to a future combatant commander. Three general areas of symmetry can be viewed as the roadmap to the TFC becoming the backbone of maritime force application. These include: Common Systems, Common Processes, and Personnel Integration. Figure 3 is a charting out of the paths and estimated time table for accomplishment of theoretical phases of implementation, through the year 2025.

Total Fleet Roadmap

Critical Path	2005-2015	2015-2025
<u>Common Systems</u> <ul style="list-style-type: none"> • Platforms • Weapons • Communications 	Initiate Common USN/USCG/USA/DHS Maritime Systems	Expand Common Systems to Federal Maritime Agencies
<u>Common Processes</u> <ul style="list-style-type: none"> • C2 • Doctrine • Acquisition • Logistics 	Begin Alignment of USN/USCG/USA/DHS Processes	• Adopt Common Processes for Other Federal Maritime Agencies
<u>Personnel Integration</u> <ul style="list-style-type: none"> • Training • Exchange 	Start integration of USN/USCG/USA/DHS <ul style="list-style-type: none"> • Training • Personnel 	<ul style="list-style-type: none"> • Achieve Integration of USN/USCG/USA/DHS • Initiate Integration with Other Agencies

Figure 3. Total Fleet Roadmap⁴⁶

First, Common Systems will enable the forces of the TFC to operate within a familiar environment of equipment and functionality. Not every system needs to be replicated by each Service (e.g. the USCG does not require integration with the Virginia-class submarine program,) however, many similar systems are necessary for each Service to perform its missions. Various vessels, aircraft, certain weapons systems, and definitely communications equipment are all areas that need to evolve into common systems across the Services.

⁴⁶ "The Road to Total Fleet", Strategic Studies Group XXIV working document, Naval War College, July 11, 2005, adapted from graphic on p. 1

Common Processes addresses the merging of procedural tasks within each Service in order to ease cross-Service coordination. By aligning common acquisition and logistics programs when duplicative efforts are underway, the Services can benefit from coordinating the activity and achieve either, savings on the program, or be able to acquire greater numbers for the same cost, through the economies of scale created by larger scope programs.

Personnel Integration will build the interoperability of the various Services when called upon to deploy for the same mission or operate as a joint unit on a common platform. Training in many specialties is often duplicated by each Service, including non-military government agencies. Economies of scale again come into play when these common training tasks are merged to not only eliminate duplicated efforts, but to form a common knowledge base between the personnel when utilized in a future TFC multi-Service environment.

C. QUADRENNIAL DEFENSE REVIEW

The 2006 Quadrennial Defense Review (QDR) was released on February 6, 2006. It is the first QDR to be influenced by the terrorist attacks on September 11, 2001 and written to address the post-9/11 world situation. The 2006 QDR also comes as the nation is continuing to prosecute the wars in Iraq and Afghanistan. The QDR's purpose is to anticipate the needs of the U.S. Armed Forces for the next two decades and provide a guide to near-term procurement decisions about the size, shape and capabilities of the U.S. military. As stated in the QDR:

"This QDR defines two fundamental imperatives for the Department of Defense:

- Continuing to reorient the Department's capabilities and forces to be more agile in this time of war, to prepare for wider asymmetric challenges and to hedge against uncertainty over the next 20 years.
- Implementing enterprise-wide changes to ensure that organizational structures, processes and procedures effectively support its strategic direction."⁴⁷

⁴⁷ Quadrennial Defense Review Report, Department of Defense, Feb. 6, 2006, p. 1

The 2006 QDR impacts the military Services and their future design by addressing several of the programs that will carry each Service into the next 20 year timeframe. The foundation of these future forces and capabilities will be put forth in the budget requests forwarded from the Department of Defense, starting with the FY 2006 input to the FY 2007 Presidential Budget Request. The plans addressed by the QDR are intended for the budget processes to be carried out over the FY2008-2013 FYDP.

The QDR pertains to the future TFC in many ways. Joint operations and interoperable forces are a continuous theme throughout the report. Directly related to the TFC and its philosophy of inter-Service and inter-agency cooperation, the QDR emphasizes that the way to achieve the strategic goals of the U.S. Armed Forces is to work together with other organizations and combine efforts necessary to combat the nation's threats. As stated in the 2006 QDR report:

As set forth in the Defense Department's *National Maritime Security Policy* and in the *Strategy for Homeland Defense and Civil Support*, the Department's strategic goal for homeland defense is to secure the United States from direct attack. To achieve this goal, the Department will work as part of an interagency effort, with the Department of Homeland Security and other Federal, state and local agencies, to address threats to the U.S. homeland.⁴⁸

In the maritime approaches, the Department works alongside the Department of Homeland Security to integrate U.S. maritime defense – optimizing the mutually supporting capabilities of the U.S. Navy and the U.S. Coast Guard. Forward deployed naval assets work with other agencies to identify, track, and intercept threats before they threaten the United States.⁴⁹

Overall, consistent with the *National Maritime Security Policy* and the *Strategy for Homeland Defense and Civil Support*, defending the homeland in depth and mitigating the consequences of attacks highlight the need for the following types of capabilities:

⁴⁸ Quadrennial Defense Review Report, Department of Defense, Feb. 6, 2006, p. 25

⁴⁹ Ibid. p. 26

- Joint command and control for homeland defense and civil support missions, including communications and command and control systems that are interoperable with other agencies and state and local governments.”⁵⁰

The concept of interoperability resonates in the entire QDR report. Lastly:

Just as the Second World War posed immense challenges that spurred joint and combined operations within the military, today’s environment demands that all agencies of government become adept at integrating their efforts into a unified strategy. This requires much more than mere coordination: the Department must work hand in glove with other agencies to execute the National Security Strategy.⁵¹

In the area of direct support for the TFC, the QDR is more ambiguous about specific actions necessary to build a maritime force as envisioned by the TFC. Several key issues are addressed that do support the future force structure of the TFC. Early on in the report’s assessment of the methods to continue the GWOT fight, the need for the Navy’s new riverine force is defined in terms of a force necessary to deny terrorist use of river waterways.⁵²

The USCG is brought up repeatedly as a force with which the Navy will coordinate integrated operations. A specific point is made as the opening to the Joint Maritime Capabilities section:

Joint maritime forces, including the Coast Guard, will conduct highly distributed operations with a networked fleet that is more capable of projecting power in the “brown and green waters” of coastal areas. They will be capable of projecting force and extending air and missile defenses from far greater ranges. Coast Guard and naval capabilities will be fully integrated. Undersea capabilities, both manned and unmanned, will use stealth, survivability, endurance, payload size and flexibility to complicate potential foes’ planning efforts and strengthen deterrence.⁵³

⁵⁰ Quadrennial Defense Review Report, Department of Defense, Feb. 6, 2006, p. 27

⁵¹ Ibid. p. 83

⁵² Ibid. p. 24

⁵³ Ibid. p. 47

Not only does the QDR support integration with the USCG, but it identifies the littorals (“brown and green waters”) as an area where power projection is needed. The network concept of the Littoral Combat Ship’s Command and Control employment vision and its future mission capability of unmanned craft are also addressed in the QDR concept of Joint Maritime operations. The QDR recognizes the comparison of the LCS to the USCG Deepwater program:

The Navy is rapidly developing and fielding the Littoral Combat Ship (LCS) to provide an advanced littoral warfare capability. The Coast Guard is recapitalizing its deepwater ships and improving its ability to conduct joint operations with the Navy.⁵⁴

The QDR indirectly references the Navy’s 313-ship future force structure plan. The numerical total of 313 ships is never stated in the QDR, however, it does emphasize that the Navy will build a larger fleet. The Navy’s QDR decisions include:

- “Build a larger fleet that includes 11 Carrier Strike Groups, balance the need to transform and recapitalize the fleet, improve affordability and provide stability for the shipbuilding industry.
- Accelerate procurement of Littoral Combat Ships to provide power projection capabilities in littoral waters.
- Procure the first eight ships of the Maritime Pre-Position Force (Future) to improve the Department’s ability to operate in restricted access environments.
- Provide a Navy riverine capability for river patrol, interdiction and tactical troop movement on inland waterways.
- Return to a steady-state production rate of two attack submarines per year not later than 2012 while achieving an average per-hull procurement cost objective of \$2.0 billion.”⁵⁵

⁵⁴ Quadrennial Defense Review Report, Department of Defense, Feb. 6, 2006, p. 48

⁵⁵ Ibid. p. 48

The maintaining of 11 Carrier Strike Groups (CSG) actually takes into account the desired retirement of the *USS John F. Kennedy* in 2006, which would reduce the number of aircraft carriers in the Fleet to 11. With the endorsement of the QDR for the 11 CSG force, the submitted President's Budget for 2007 reflects the same number for carrier force funding.⁵⁶

The QDR policies reviewed are in line with the National Strategy for Maritime Security and strongly supportive of the National Fleet Policy, through several statements striving for a greater cooperative effort with the USCG. The QDR fully recognizes that the DOD cannot meet all of the challenges faced by it in the current and future timeframe without integration and close coordination with all U.S. Government agencies. The baseline proposals of the TFC are firmly supported by the language of the QDR. Standardization of concepts, compatible technology and equipment, coordinated planning and deployment of forces, and integrated training consolidation are all areas that are identified in the QDR and play to the strengths of the TFC for a future maritime force.

The Navy will clearly have to maintain and continue development of its own necessary capabilities to carry out its mission objectives. While the traditional roles and missions of the Navy still come first, the Littoral Combat Ship (LCS), the Riverine Group, and the recapitalization of the entire surface combatant force are ongoing programs that will add to the flexibility of the Navy force structure. The TFC takes advantage of these growing capabilities within the Fleet and amplifies them for a broader, scalable capability. The TFC does not alleviate the Navy's requirement for maintaining current force structure, with the capabilities to fight at the Major Combat Operations level versus an adversarial nation state, and exploring new force capabilities in order to field sufficient maritime presence in the future. The assessment of the U.S. maritime forces currently available for the TFC shows a force structure over 1100 vessels strong. In order to maintain and upgrade the Navy's contribution to the TFC, the

⁵⁶ FY 2007 President's Budget, Department of the Navy, http://public.secnave.navy.mil/pubbud/07pres-Section_II.pdf, Feb. 2006 (Last accessed Feb. 2006)

Navy's near-term budget plans and long-term shipbuilding plans must be examined for their feasibility and contribution to the transformational concept of the Total Fleet.

IV. ANALYSIS OF BUDGET IMPACT ON THE TFC

A. CURRENT FORCE BUDGET PLAN

As previously referenced in Chapter III, the current size of the Navy battle force stands at 281 ships.⁵⁷ This level of force size has been a growing concern for both the Navy and the Congress, as it affects the ability of the Navy to successfully carry out its missions and the effect it has on the country's shipbuilding industrial base. The goal of establishing a base Fleet size of 313 ships has been the Navy's response to the need to arrest the decline in the number of ships and provide stability to the shipbuilding industry. The Chief of Naval Operations (CNO), Admiral Mullen, has stated that he would be "very uncomfortable...very concerned" if the Fleet strength slipped to less than the 281 ships in the current force.⁵⁸

Building on the FY 06 Navy budget request and progressing through the FY 07 through FY 11 Future Years Defense Program (FYDP), the Navy is putting forth the plan to build the Fleet towards the 313-ship level. The Total Fleet Concept (TFC), while leveraging the capabilities of many agencies in the U.S. government's maritime arsenal, requires a significant Navy core to base the total force around. The concern is that the future budget requests will fall short of the dollars necessary for the Navy's expansion plan, making the achievement of the TFC over the next 30 years questionable. In order to verify a force structure foundation for the TFC, the FY 06 Shipbuilding budget, the FY 07 – FY 11 FYDP, and the Navy's 2007 30-Year Shipbuilding Plan must be examined for their feasibility and procurement mix.⁵⁹ Determination must then be made as to whether the Navy is taking actions that are leading to the transformational Fleet which will support the TFC or if the Navy's future plans are still tied to the legacy structure of the Cold War era.

⁵⁷ Fleet Size, Naval Vessel Register, www.nvr.navy.mil (Last accessed May 2006)

⁵⁸ "ADM Mullen Opposes Navy Fleet Less Than 281 Vessels", Dave Ahearn, Defense Today, Apr. 25, 2006

⁵⁹ All data presented in this thesis will be in FY 07 dollar baselines unless otherwise noted.

Estimates for the cost of future Fleet procurement vary significantly. The Navy's cost estimates for each new construction program are at the lower end of the spectrum, while the Cost Analysis Improvement Group (CAIG) within the Office of the Secretary of Defense and the Congressional Budget Office (CBO) estimates are usually on the higher end. Future budget projections described in the following sections of this chapter will utilize data from the Navy and either or both the CAIG and CBO for the purpose of displaying the best and worst case scenarios concerning budget issues.

1. Overview of the Long-Range Shipbuilding Plan

Concurrent with the finalization of the Navy's budget input for the President's FY 2007 Budget Request, was the development of the Annual Long-Range Plan for Construction of Naval Vessels for FY 2007 report, also known as the "30-year shipbuilding plan." This report details the Navy's procurement forecast for the next 30 years, ending in 2036. The FY 2007 report is also where the Navy defined its goal of the 313-ship Fleet structure. The 30-year shipbuilding plan was developed alongside the 2006 Quadrennial Defense Review (QDR) report and is designed to support the Navy mission requirements of the National Security Strategy.⁶⁰ The QDR did not specifically endorse the Navy's quantitative force structure that the 30-year shipbuilding report reflects, although it did back a carrier end-strength of eleven nuclear aircraft carriers and promoted growth in the size of the Fleet, including adding a riverine capability, to combat the threats faced in the GWOT.

Table 6 shows the total ship construction plan over the next 30 years for all major battle force ships. 280 ships are projected to be purchased over the course of the plan's implementation. The 30-year timeframe is broken down into three phases to divide the known projection of the future Fleet asset procurement scenarios:

⁶⁰ "Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007", Chief of Naval Operations, delivered to Congress on Feb. 7, 2006

- “Near Term” - equates to the published FYDP period.
- “Mid Term” - beyond the FYDP out to a 15-year future point, using Defense-wide planning scenarios and intelligence assessments of future force structure based on programs already underway.
- “Far Term” - beyond the 15-year mark into the future and is based on Navy analytical efforts and notional cost estimates.

The master procurement plan illustrated in Table 6 forms the basis for procurement plans put forth in the enacted President’s FY 06 Budget Request and projected for the FY 07 - FY 11 FYDP.

		Near Term	Mid Term	Far Term
Battle Force	FY	07 08 09 10 11	12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
Carrier	CVN	1	11	1111
Surface Combatant	CG(X)	1	11212222	221
	DDG(X)			12222222222222
	DD(X)	2111	11	
	LCS	23666	65665	1323666
Submarine	SSN774	11111	222222221	
	SSN774I		1	22222222121212
	SSBN(X)			1111111111111
Amphib	LPD17	1		
	LSD(X)		1	1111111121
	LHD(X)			111111
	LHA(R)	11		
Logistics	T-AO(X)		11	2222221
	T-AOE			1111
	T-AKE	11		
MPF(F)	M LHA	1	1	
	MLP	11	1	
	M T-AKE	111		
	LMSR	11	1	
Connector	JHSV	111		12
Support	MULTI		12211	123211
Total		77111214	13121111104645	91011111010108710888121011

Table 6. Long-Range Naval Vessel Construction Plan⁶¹

⁶¹ “Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007”, Chief of Naval Operations, delivered to Congress on Feb. 7, 2006

2. FY 06 Shipbuilding Plan

The FY 06 Shipbuilding Plan originally requested procurement of just four new construction ships for the Fleet. The Navy's Budget Request asked for funding for one Virginia-class nuclear attack submarine (SSN), one LCS, one San Antonio-class amphibious transport dock ship (LPD-17), and one Combat Logistics Force ship (T-AKE) (Appendix D, Figure 14).⁶² This request was the lowest procurement total submitted over the last 9 years and at the lowest level (only equaled three other times) in the last 25 years.⁶³ The final version of the FY 06 DOD Appropriations Act (H.R. 2863), signed by the President on December 30, 2005, contained additional funding for two more LCS units to bring the total shipbuilding procurement up to six ships for FY 06.⁶⁴

The total approved budget for FY 06 new construction shipbuilding is \$10.595 billion, which represents approximately 8.6 percent of the total FY 06 Navy budget appropriation (not including any supplemental additions). This total does not include the original, single LCS, or the T-AKE vessel procurement costs. The LCS was funded in the Research, Development, Test, and Evaluation, Navy (RDTEEN) account and the T-AKE was funded within the National Defense Sealift Fund (NDSF). Had these two ships been included as part of the Shipbuilding and Conversion account (SCN) account, the total would have been \$652 million higher (\$275 million for the LCS and \$377 million for the T-AKE).⁶⁵ The two LCS ships added by Congress are to be funded directly by the SCN account. All future procurement for LCS seaframes will be funded through the SCN account, and the T-AKE ships are due to continue their funding in the NDSF account. Taken in its original form, the baseline FY 06 Budget Request only paid for two new construction ships. The balance of the SCN

⁶² "Highlights of the Department of the Navy FY 2006/2007 Budget", Office of Budget, Department of the Navy, Feb. 2005

⁶³ CRS Report RL 32665, "Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress, Ronald O'Rourke, Congressional Research Service, Feb. 6, 2006

⁶⁴ "Highlights of the Department of the Navy FY 2007 Budget", Office of Budget, Department of the Navy, Feb. 2006

⁶⁵ "Research, Development, Test & Evaluation, Navy Budget Activity Four" and "National Defense Sealift Fund", Department of the Navy Fiscal Year 2007 Budget Estimates Submission, Feb. 2006

account was allocated for nuclear refueling, advance procurement costs, and outfitting for ships acquired in the previous year's budget.

The FY 06 budget is not a great leap forward on the path to the 313-ship Navy, but it does take the first steps toward expanding the Navy into the mission areas necessary to enable the TFC. Two areas addressed as necessary missions for the Navy to expand into are the coastal maritime space and the "brown water" of rivers and other inner waterways. Strengthened by the addition of two more LCSs in the procurement total for FY 06, the appropriations required for the entire four units of the LCS program Flight 0 phase are completed. This development will accelerate the test and evaluation portion of the introduction of the LCS to the Fleet and broaden the database for lessons learned that will be applied to the follow-on Flight 1 construction phase.

An additional cost of the LCS is the mission module warfare packages required by each LCS to become a focused-mission platform beyond the basic seaframe. Based on the original budget submission for FY 06 (not including the two units added by Congress), the LCS force would have only been two ships in acquisition. The FY 06 RD TEN budget includes the funding for three LCS Mission Packages. This equates to a 3-2 ratio of modules to seaframes for the LCS program as initially requested.⁶⁶ The first four modules procured through the RD TEN account average \$48 million each. The cost rises to \$54 million apiece for the modules procured throughout the FYDP period.⁶⁷ FY 06 is the final budget year that the LCS modules are procured via the RD TEN account. All follow-on budget requests for LCS modules are to be included in the Other Procurement, Navy (OPN) account. The average procurement cost for the LCS as a complete mission-capable ship is increased by nearly \$100 million, once the mission module costs are included. This "hidden" cost of the LCS program is cause for some concern as to the true cost being reflected in the SCN budget request, which currently lists a unit cost of \$220 million for the base LCS

⁶⁶ Overall FYDP budget data indicate a slightly higher ratio (3.5 – 2), however, a 3-2 ratio will be used as a baseline procurement statistic for analysis.

⁶⁷ FY 07 Budget Item Justification Sheets for LCS Modules and LCS Mission Package Development, Other Procurement, Navy and RDT&E, Navy, Department of the Navy, Feb. 2006

seaframe. CBO estimates put the LCS program at \$400 million for each LCS and its share of the mission module program.⁶⁸

The DOD FY 06 Supplemental Request, submitted to Congress in February 2006, contains funding appropriation requests for \$28.85 million to begin outfitting the NECC Riverine Force.⁶⁹ This initial funding will equip the first riverine squadron with new river combat boats in preparation for their first proposed deployment to Iraq in early 2007. Together with the LCS funding, these budget developments are positive TFC actions and will provide capability to focus the Fleet on the missions essential to expanding the Navy's role in the Global War on Terrorism (GWOT).

3. FY 07 Budget Request

The FY 07 budget is the opening round of the Fleet expansion under the 313-ship plan and the first year of the current FYDP. Seven ships are requested in the FY 07 shipbuilding request (see Table 7), including the procurement funding for both units of the dual-lead ship DD(X) program (Appendix D, Figure 9). The first two DD(X)s are both to be split-funded across FY 07 and FY 08 budgets due to the high cost of the new destroyer. This procurement plan makes appropriations to each primary contractor to produce a DD(X) destroyer simultaneously. Lead unit cost for the DD(X) is estimated by the Navy at \$3.3 billion, with slight reductions per unit as follow-on ships are procured.⁷⁰ Two additional LCSs are requested, as is the lead unit of the new Amphibious Helicopter Assault (Replacement) (LHA(R)) class. The combined total for the SCN and NDSF (one T-AKE funded) accounts is approximately \$8.7 billion.

The FY 07 budget does not include the procurement funding of the riverine force's small watercraft. Funding for the boats required by the NECC Riverine Group was included in the FY 06 Supplemental Request, but further

⁶⁸ "Resource Implications of the Navy's 313-Ship Plan", Congressional Budget Office, Dec. 16, 2005

⁶⁹ "DOD FY 2006 Supplemental Request for Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF)", Department of Defense, Feb. 24, 2006, p. 40

⁷⁰ CRS Report RL 32109, "Navy DD(X), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress, Ronald O'Rourke, Congressional Research Service, Mar. 7, 2006

funding is not requested in the President's FY 07 Budget Request. It can be surmised that another supplemental budget request in FY 07 will be the source of the additional funding necessary to continue the equipping of the riverine forces. The Riverine Group is being developed as a permanent part of the Navy force structure and is a high-priority element of the Navy's participation in the GWOT. Future budget outlays will have to be part of the baseline budget in the future in order to stabilize its equipment procurement and Operations and Maintenance funding. The baseline FYDP budget plan does not currently include the funding program to outfit the equipment for the newly established Riverine Group within the NECC.

B. FY 2007 - FY2011 FUTURE YEARS DEFENSE PROGRAM (FYDP)

Navy budget request projections are currently addressed in the FYDP covering FY 07 through FY 11. The assets funded via the FYDP will form the basis for the Fleet that will be the core of the TFC. Viability of the TFC depends on the support of the near-term procurement decisions to build the proper force mix in order to enable inter-Service/agency cooperation. The FYDP is the first step toward building the 313-ship Navy and will require an increased funding plan over the new construction appropriations of the recent 2000-2005 period. Over that period, the average funding for ship new construction, excluding the cost of nuclear refueling evolutions and modernization projects, was \$10.6 billion⁷¹. The Navy projection for implementing the 313-ship Fleet plan is an annual expenditure of \$14.1 billion⁷² on new construction to build and maintain the 313-ship level. The CBO estimate for the annual expenditure level necessary is \$19.4 billion for new construction.⁷³ Along with the budgeting rate necessary for the future Navy force structure, a steady-state replacement rate to maintain it will require the average procurement of 9.5 ships per year to keep pace with Fleet

⁷¹ Most reports cite \$10.2 billion, however, this is a FY 05 figure; \$10.6 billion is used to reflect the constant year 2007 dollar amount.

⁷² \$14.1 billion is not the commonly referenced figure for the Navy's annual estimate, however, the usual figure of \$13.4 billion is in FY 05 dollars. \$14.1 billion is the FY 07 conversion.

⁷³ "Potential Costs of the Navy's 2006 Shipbuilding Plan", J. Michael Gilmore and Eric J. Labs, CBO Testimony before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, Congressional Budget Office, Mar. 30, 2006

growth being off-set by the ongoing process of decommissioning older combatants.⁷⁴ After FY 08, procurement numbers start to climb above that level with the advent of increased Flight 1 LCS acquisition and continue up to 14 ships in FY 11 by the end of the FYDP period.

Table 7 illustrates the new construction totals included in the FY 07 – FY 11 FYDP. A substantial rise in construction funding begins in FY 08 and continues over the course of the FYDP. The increase from FY 08 onward closely represents the approximate annual average expenditure of \$14.1 billion necessary to implement the 313-ship plan. Table 7 shows examples of the split-year funding deviations from the full-funding concept for the CVN-21, DD(X) and LHA(R) programs. The costs associated with those three programs alone account for 60% of the FY 08 SCN budget. The totals of Table 7 contain some carryover cost data from projects primarily funded in the previous fiscal year. Close-out amounts for the last DDG-51 units, an LPD-17, and the RDTEN-funded LCS units are included in the FYDP requests.

Ship Types	FY 2007 Plan and FYDP TY \$M								Total FY(07-11)	
	FY07	Qty	FY08	Qty	FY09	Qty	FY10	Qty	FY11	Qty
CVN 21	784		3482	1	3858		1679		541	
SSN 774	2452	1	2499	1	3527	1	3748	1	3766	1
DD(X)	2568	2	3055		2607	1	2701	1	2308	1
CG(X)									3235	1
LPD-17	297		1501	1						
LHA(R)	1136	1	1380				2004	1	1728	
LCS	521	2	948	3	1764	6	1774	6	1825	6
T-AKE	455	1	400	1						
MPF(F)			36		1595	2	1422	2	3570	4
JHSV					198	1	174	1	182	1
DDG-51	356		86							
LCS RDTE	100		37		7					
Total New Construction	8,669	7	13,425	7	13,556	11	13,503	12	17,156	14
									66,308	51

Table 7. FY 2007-2011 Shipbuilding Budget⁷⁵

Also of note is the cost of the LCS program each year. The stated goal of the LCS program was to remain within a \$220 million (FY 05\$) cost structure for

⁷⁴ CRS RL 32665, "Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress", Ronald O'Rourke, Congressional Research Service, Feb. 6, 2006

⁷⁵ "Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007", Chief of Naval Operations, delivered to Congress on Feb. 7, 2006

the seaframes, however, the FYDP average cost for LCS is \$298 million. This represents a 35% increase over the FY 07 adjusted \$223 million goal. Converting the \$948 million FY 08 Then-Year dollars for 3 LCSs to FY 07 constant dollars shows an even higher unit cost of \$307 million per LCS. This figure is significantly greater than the original \$220 million target for the LCS program, even when considering adjustments for inflation, and is a sign that the cost of the program over the long-term may be much greater than originally anticipated.

The FYDP's new construction procurement places most of the emphasis on re-capitalization of the current asset types within the Fleet. Several new classes of ships are started in the FYDP, however, they are generally only replacements for the older ship-class units that are being retired. CVN-21, SSN-774, DD(X), CG(X), LPD-17, LHA(R), and the T-AKE ships are all upgraded versions of previous warship classes. All of these platforms are geared for Major Combat Operations (MCO) in the Blue-water environment or standard expeditionary operations. Within the FYDP procurement plan, only the LCS program is a new approach to naval warfare and a step toward the TFC with a platform that can better fulfill the GWOT mission. The acquisition of 23 LCSs represents 45% of the total number of ships to be procured, yet is only a small portion of the overall new construction budget, accounting for 9.4% of the FYDP dollar total.

C. 30-YEAR SHIPBUILDING PLAN AND THE TFC

1. 30-Year Plan Budget Implications

As stated previously, the average annual funding necessary to achieve and sustain the 30-year shipbuilding plan is \$14.1 billion. This represents an average budget increase of over 33 percent based on the 2000 to 2005 new construction appropriation average of \$10.6 billion. During the FYDP period, the overall Navy budget rises from \$127.3 billion in FY 07 to a level of \$140 billion by FY 10. The budget flattens to maintain nearly the same level for FY 11. Overall, the Navy budget only raises a total of nine percent in FY 07 constant dollars over

this period.⁷⁶ Over the same timeframe, based on Table 7 data, the FYDP for new construction shipbuilding reflects a constant dollar increase of 82 percent between FY 07 and FY 11.⁷⁷ New construction shipbuilding, in terms of percentage of the total annual budget, represents 6.5 percent in FY 07 and 10.7 percent in FY 11.

This issue leads to the question of what is being reduced within the budget in order to increase the percentage and constant dollar amount in the new construction procurement accounts (SCN and NDSF). The primary area where funding is reduced in the FY 07 budget request is in the RD TEN account. Nearly \$2 billion less is requested for RD TEN than in the previous year. This is explained in the FY 07 Budget Highlights book as a response to several programs moving into a mature technology phase and not requiring as high a level of RD TEN funds. Research and development budgets are estimated to fall from \$19 billion to the \$14 billion level by 2012 and remain flat for the rest of the 30-year plan timeframe.⁷⁸ The multiple new shipbuilding programs utilizing new and unproven technology may cause a re-evaluation of the Navy's ability to cut the RD TEN budget in later years of the FYDP period.

Referring to Table 6, aside from the acquisition of the LCS, the 30-year shipbuilding plan has only minimally altered the ships that will outfit the Fleet in the future. The TFC does benefit from the expansion of the Navy's main battle force size, in both numbers and technological improvements, but this is an area where the Fleet was already strong. The 30-year shipbuilding plan makes a solid commitment to the LCS program, budgeting 55 ships by FY 16. The peak shipbuilding years in the plan are due mainly to the high number of LCS units

⁷⁶ "Highlights of the Department of the Navy FY 2007 Budget", Office of Budget, Department of the Navy, Feb. 2006

⁷⁷ FY 07 and FY 11 New Construction totals are in Then-Year dollars. For comparison of the gross percentage change over the two FY periods, the Naval Cost Analysis Division Inflation Calculator for FY 06 was used to convert both years Then-Year data to FY 07 Constant Year data. The respective resulting figures for FY 07 and FY 11 are \$8,244B and \$15,014B.

⁷⁸ "Highlights of the Department of the Navy FY 2007 Budget", Office of Budget, Department of the Navy, Feb. 2006 and "Potential Costs of the Navy's 2006 Shipbuilding Plan", J. Michael Gilmore and Eric J. Labs, CBO Testimony before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, Congressional Budget Office, Mar. 30, 2006

being procured. The LCS brings the Fleet closer to the battle space of the GWOT in the littoral regions. However, both in numbers and relative platform size, it could be considered a slightly smaller replacement for the place in the Fleet currently filled by the FFG-7 class ships. A mission configured LCS, however, will not be the capability equivalent of a multi-mission platform like a FFG-7.

The major units being acquired in the 30-year shipbuilding plan still represent a primarily Major Combat Operations-focused force structure. The aircraft carrier force is maintained at the 2006 QDR recommended level of 11 carriers through 2018, then climbs to 12 carriers for the duration of the 30-year plan. Questions must be raised as to the necessity of a carrier strength increase and whether there will be air wing assets to outfit a 12th carrier once the Fleet acquires it.⁷⁹

DD(X) is a major program for the surface force and focuses on the land attack mission as one of its main selling points. The DD(X) will be outfitted with several new technology systems, including the Navy's Advanced Gun System (AGS) which will be able to provide long-range gunfire support to Marine units ashore. The DD(X) will also be a cruise missile platform for deep strike power projection. The cost of the DD(X) has been a troubling element of the program and is likely to blame for the reduction of the original vision of 16 to 24 units down to the current plan of seven. The low number of DD(X)s actually procured give the appearance of too much capability in too few platforms. Seven units doesn't provide much depth in the warfighting areas DD(X) was designed for and does not contribute significantly to the expansion of naval power into transformational areas envisioned by the TFC.

Procurement of the Joint High Speed Vessel (JHSV) appears to be too limited for it to make much impact on the Fleet in the future. Only three JHSVs

⁷⁹ "Highlights of the Department of the Navy FY 2007 Budget", Office of Budget, Department of the Navy, Feb. 2006 and "Potential Costs of the Navy's 2006 Shipbuilding Plan", J. Michael Gilmore and Eric J. Labs, CBO Testimony before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, Congressional Budget Office, Mar. 30, 2006

are programmed for the lifespan of the platform, which only provides one unit per coast and one unit as a spare. This leaves the Sea Basing concept with only limited utilization of the JHSV platform, however, the TFC would integrate the Army JHSVs into the Sea Basing plan and treat the entire number of Navy and Army JHSVs as one force.

The scalable force of the TFC has yet to be addressed by the 30-year shipbuilding plan with the heavy emphasis on the major Blue-water oriented platforms. As noted in earlier chapters, the TFC is a method of adapting the Navy to the threat faced in the current and future years, mainly as part of the GWOT. The large capital investment in the 30-year shipbuilding plan and individual costs of the new platforms in development leave little room for cost increases to be absorbed. The cost affordability of the Near- and Mid-Term portions of the plan will have a significant impact on the entire Navy budget in the coming years.

2. 30-Year Shipbuilding Plan Affordability Issues

The costs of the 30-Year Shipbuilding Plan are the weakest point of the plan. The Navy estimate of \$14.1 billion is questioned by the Congressional Budget Office (CBO) as being too optimistic. The CBO believes that the actual cost of the 30-Year Shipbuilding Plan will be closer to a \$19.4 billion average annually. Table 8 compares data on the Navy and CBO's estimated projections for the Average Unit Cost (AUC) of several major new construction programs over the entire period from 2007 to 2035. The DD(X) program shows a 28% difference in estimates, followed closely by the similarly designed CG(X) with a 22% variation. The LHA(R), being a more limited procurement program, exceeds both surface combatant programs with a 64% difference. Serious budget shortfalls will be faced if the shipbuilding costs come out closer to the CBO numbers.

Ship Type	Average per ship cost (FY 07\$ B)	
	Navy	CBO
CVN 21	9.4	9.6
DD(X)	2.8	3.6
CG(X)	2.7	3.2
SSN 774	2.1	2.7
LHA(R)	1.4	2.3

Table 8. Average Unit Cost of Platforms⁸⁰

One of the primary issues facing the annual budgets associated with the 30-year plan is the coordination of when to procure each platform so as not to program too many of the high cost platforms all in the same fiscal year. The CVN-21 program is the most expensive shipbuilding project of the plan, with a projected procurement rate of one carrier every five years. The high cost of the CVN-21 ships has resulted in the use of several years of advance procurement budgeting followed by split-funding across two fiscal years once the ship is included in the President's Budget Request.⁸¹ The next major program expenses are the costs associated with the DD(X) and the related CG(X) ships. The lead ship cost for DD(X) is \$3.3 billion, and the CAIG and CBO estimate that that number may actually be \$4.1 or \$4.7 billion, respectively, based on their method of historical cost to weight relationships and a higher inflation rate, based on a higher rate historically effecting naval shipbuilding. The danger in the DD(X) program is that if the actual costs are closer to the CBO's lead ship estimated cost, then the procurement of DD(X) will impact the budget dollars available for other programs.

As a counter to the high cost of the new platforms being procured is the cost savings that will be realized due to the smaller crew size of the newer ships. It is estimated that CVN-21 will have approximately 1000 fewer ship's company and airwing personnel necessary to fulfill its mission requirements. DD(X) has a

⁸⁰ "Potential Costs of the Navy's 2006 Shipbuilding Plan", J. Michael Gilmore and Eric J. Labs, CBO Testimony before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, Congressional Budget Office, Mar. 30, 2006

⁸¹ CRS Report RS 20643, "Navy CVN-21 Aircraft Carrier Program: Background and Issues for Congress, Ronald O'Rourke, Congressional Research Service, Jun. 24, 2005

crew estimate that is approximately 150-170 personnel, which is roughly half the crew size of the current DDG-51 ships. A figure of \$60,000 per crewmember per year is an approximate amount for the cost of manpower for a Navy ship.⁸² This equates to an annual cost savings of \$60 million for CVN-21, \$9.6 for DD(X) and \$8.7 million for LCS (over a FFG-7). Projected out over the expected operational lifespan of a particular platform, CVN-21 saves \$3 billion, DD(X) \$336 million, and LCS saves \$218 million just on manpower alone.⁸³

The manpower savings are evidence that upgrades in technology and manpower efficiency can potentially make a large difference in the lifecycle costs of a Navy platform. CVN-21 works out from a \$9.4 billion AUC minus the \$3 billion in military personnel savings down to roughly a \$6.4 billion cost, which is less than the Navy's projected cost for a repeat build of the *Nimitz*-class design (estimated at \$7.4 billion⁸⁴). LCS shows significant savings on manpower over the FFG-7 class of warship. If the LCS program can keep procurement costs under control, the manpower savings can be factored in to ensure the program is considered affordable.

The manpower savings over the lifecycle of the ship does not offset the high cost of the DD(X) program, however. The \$336 million savings over the 35-year lifespan of a destroyer is not a significant reduction in the overall AUC of the DD(X), which at a minimum is \$2.8 billion. The roughly adjusted \$2.5 billion dollar cost of a DD(X) is still far above the \$1.8 billion average for a single unit per year procurement of DDG-51 ships.⁸⁵ If the DDG-51 is procured at a 2 or 3-

⁸² Based on Navy VAMOS system (Visibility and Management of Operating Support Costs) analysis of DDG-51 data by Eric Labs, Principle Analyst for the Congressional Budget Office

⁸³ "Potential Costs of the Navy's 2006 Shipbuilding Plan", J. Michael Gilmore and Eric J. Labs, CBO Testimony before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, Congressional Budget Office, Mar. 30, 2006. Projected lifespan for a nuclear carrier – 50 years; large surface combatant – 35 years; LCS – 25 years.

⁸⁴ "CVN 21 Class Capabilities Improvements" brief, Program Executive Office, Aircraft Carriers, May 5, 2006

⁸⁵ "The Navy's DD(X) Destroyer Program", J. Michael Gilmore, CBO Testimony before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, Congressional Budget Office, Jul. 19, 2005

ships per year rate, the AUC drops to \$1.4 billion or \$1.25 billion, respectively.⁸⁶ The DDG-51 Modernization program expects to cut the manpower needs of the current DDG-51 crew and realize an average \$37 million reduction in personnel costs over the remaining 18-year lifespan of each ship.⁸⁷

The high cost of the DD(X) and the related CG(X) program are demonstrations that the Navy must keep costs under control if the 30-year shipbuilding plan is going to be executable. If costs rise to the level that is estimated by the CBO, the Navy will have to re-evaluate the priorities of the shipbuilding program, other procurement programs, the RDTEN account, and the Operations and Support budgets to determine where reductions will have to come. It is doubtful that a significant rise in costs can be covered by increasing the overall Navy Budget Request input to the President's Budget to Congress.

3. Effect on the TFC

The overall 30-year shipbuilding plan provides the TFC with the core naval forces necessary to maintain the Navy's dominance versus any peer competitor. While the TFC is a broad-based integration of all the major U.S. maritime assets, it is still vital that the Navy retain its superiority in the Major Combat Operations arena. The high cost of the 30-year shipbuilding plan does endanger the ability of the Navy to broaden its mission baseline into the areas of interoperability with other military and government agencies.

The TFC is designed to provide the force necessary to combat the level of threat faced. Ideally, the TFC will save costs to the Navy in the long run, due to the Navy not having to procure the systems and vessels to accomplish missions where the Navy is not well suited at present. The TFC force will be the strongest and most integrated in the homeland security and defense operations area. In this battle space, the Navy should not have to expend a great deal of resources to duplicate the efforts of other U.S. agencies. Where the Navy should apply

⁸⁶ CRS Report RL 32109, "Navy DD(X), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress, Ronald O'Rourke, Congressional Research Service, Mar. 7, 2006

⁸⁷ "Report to Congress on DDG-51 Class Guided Missile Destroyer Modernization Plan", Naval Sea Systems Command, PEO Ships, Mar. 2005

itself in the homeland operations area is in joint training and cooperation with the forces that already exist among the USCG, Customs and Border Patrol, and other federal agencies.

Where the Navy's 30-year shipbuilding plan will affect the TFC the most is in the global application of the TFC. The 30-year plan is heavily weighted to the Blue-water Navy concept of operations, even with the LCS included. The expense of the major programs such as CVN-21 and DD(X) will reduce the amount of Navy appropriations that can be devoted to the lower level mission assets that may be called upon to engage the GWOT threat as it develops into the foreseeable future.

Several aspects of the 30-year shipbuilding plan and the near-term procurement budget requests indicate that the emphasis will remain on status quo force structure rather than a transformation of the Navy to a new environment of operational engagement. The key issues of the future Fleet structure budget plans and composition that will affect the Navy's progress toward the TFC are summarized in Chapter V.

V. SUMMARY AND RECOMMENDATIONS

A. SUMMARY

The Total Fleet Concept (TFC) is a broad view of the Fleet of the future. In the TFC, the maritime forces of the U.S. Government are arrayed over the entire globe to ensure the successful achievement of U.S. policy. This force must be capable of working with the smallest allied or host nation, and be prepared to confront a peer competitor at the nation state level. The Navy forms a substantial portion of the envisioned TFC maritime force. The scalable nature of the TFC is designed to give the future combatant commanders the options required to conduct the “long war” of the Global War on Terrorism (GWOT.) The assets of the TFC include, but are not limited to the assets of today’s Fleet. This thesis was an examination of the budgetary environment that is projected for the near-term as part of the Future Years Defense Program, and the force structure plan that the Navy has mapped out for the next 30 years, with the end goal of determining the extent to which the Navy’s improvement plan is structured for the transformational support necessary to realize the TFC.

Several key issues and observations relative to the implementation of the TFC are drawn from the budget analysis of Chapter IV. Below is a reiteration of these issues and observations:

- The projected budget requirement for the Navy to pursue the 313-ship force structure may range between \$14.1 and \$19.4 billion in order to maintain the steady state sustainment rate of building 9.4 ships per year. At a minimum, this represents a 33 percent increase over the average annual shipbuilding appropriation from FY 00 to FY 05.
- The cost per unit of the LCS has been requested in the FYDP budgets at a higher rate than the program’s target goal of \$220 million, indicating that the LCS total procurement costs will be

significantly higher than the Navy's program estimate of \$17.6 billion for the seaframes alone.⁸⁸

- Research and Development funds are being reduced in the FYDP. Careful examination of the impact on new ship development with multiple un-tried systems should be considered before R & D funding is reduced.
- The LCS is numerically replacing the FFG-7 frigates but it is not a capabilities replacement for that vessel class.
- The Navy's stated requirement for carrier end strength is eleven ships, however, the 30-year shipbuilding plan has the carrier force increasing to twelve after 2018 and remaining at that level indefinitely.
- A seven-unit procurement for DD(X) appears to be too much technology in too few platforms to justify its exorbitant expense.
- The Navy procurement numbers of the Joint High Speed Vessel appear to be too few to adequately provide a robust capability to the Fleet.
- The high cost of the 30-year shipbuilding procurement plan does not leave much leeway in its ability to be flexible if costs rise or new acquisition programs become viable.
- The Navy expects to save costs over the lifespan of new platforms, such as CVN-21 and DD(X) through crew size reductions.
- Manpower savings for DD(X) over the 35-year life of the vessel will only result in a \$336 million in savings.
- The high cost of the DD(X) / CG(X) family of ships indicates that every effort must be made to reduce shipbuilding costs.

Despite the critical nature of these issues, the Fleet in 2006 is as capable as it ever was to accomplish the Blue-water mission. However, maintaining its dominance in the Blue-water mission area is not enough. The Navy must carry

⁸⁸ CRS Report RL 32109, "Navy DD(X), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress, Ronald O'Rourke, Congressional Research Service, Mar. 7, 2006

its share of the littoral and coastal/Brown-water combat mission. Even though the USCG is embarking on its largest procurement spending program in its history, it won't be enough to fill all the roles necessary for homeland security and the GWOT. This is where the Navy and the TFC can be helpful in the maritime plans for the nation's defense.

B. CONCLUSIONS

1. National Fleet Policy Blueprint

The National Fleet Policy agreement is an important foundation for the TFC. The policy of encouraging cooperation and mutual support between the USCG and the Navy is at the heart of what the TFC will represent for the maritime forces of the U.S. The GWOT has given the 2006 restatement of the National Fleet Policy more substance for the two Services to build upon when planning for the future.

The concept of the National Fleet Policy is an outstanding model for taking two components of the U.S. maritime forces and leveraging the best features of each to build a more efficient and effective combination. The larger vision of the TFC represents the National Fleet Policy on a grander scale. The capabilities of all U.S. maritime forces would be coordinated, both operationally and at the material procurement level. Economies of scale in procurement of like assets would enable all U.S. military and federal maritime agencies to benefit from lower cost equipment acquisition and greater buying power from the appropriations they are provided.

The actual implementation of synchronized Navy and USCG projects in the spirit of the National Fleet Policy has not yet been achieved on a large scale. The National Fleet Policy's effect on procurement has been limited to Command and Control (C2) systems and programs such as the 57mm gun and surface search radar for the Littoral Combat Ship (LCS) being planned for the larger Integrated Deepwater System (IDS) cutters.⁸⁹ At the higher level of acquisition, it has so far been a missed opportunity for the LCS and USCG IDS programs not to pursue commonality and plan for a joint procurement program which would

⁸⁹ Phone Interview with LCDR Chris Strong, USCG, N76, May 5, 2006

marry the LCS requirements with the National Security Cutter or the Off-shore Patrol Cutter, all of which are in a common range of size and capability (refer to Appendix C.) Not only would such a program have been able to achieve commonality of equipment between the Services, it would have lessened the cost of procurement through the economies of scale for increasing the production of a chosen design. The opportunity is not lost to pursue a combined program plan. Steps could be taken to develop the right platform(s) to satisfy the joint requirements of the Navy and USCG programs. Separately, the two Services' shipbuilding programs are very ambitious and the possibility exists that neither will be completed as planned without a reduction in the overall costs by way of finding the efficiencies of combined programs.

2. The QDR and the 30-Year Shipbuilding Plan

The 2006 Quadrennial Defense Review (QDR) champions inter-agency cooperation throughout that document. The QDR is an overview report on the forces envisioned to meet the current and projected future threat. On that level it has strong support for the philosophy of the TFC. The 30-year shipbuilding plan, on the other hand, is a specific plan to support the 313-ship Navy force structure, which is firmly based on the Navy's ability to carry out Major Combat Operations (MCO). While the TFC has the Navy's MCO-structured force at its core, it is not the Fleet that will expand the reach of the Navy into the battlespace where the current threat is found. The mission of the future Fleet is shifting to a new type of combat operations. The more the nation adjusts to fight the GWOT, the less relevant the Navy of today becomes in its current and proposed form. In some respects, the 313-ship plan is building a Fleet that is too large for the threat being faced.

The Navy has begun several programs that serve as the stepping stones to the future force envisioned by the TFC. The GWOT has shown that the Navy has a greater role to play in mission areas that are not currently addressed by today's force structure. The LCS program is clearly transformational thinking in terms of revolutionary methods to employ naval force on a focused mission area and still maximize platform flexibility. The Joint High Speed Vessel (JHSV)

program is also transformational and shows that joint acquisition programs to solve common needs are feasible and desirable. Finally, the development of the Riverine Group returns the Navy to the forefront of the Brown-water naval environment where the asymmetrical threats of the GWOT call for a flexible, scalable force.

The above programs, unfortunately, are not enough to demonstrate true transformational attributes within the Navy's FYDP and 30-year shipbuilding plan. The Navy's proposal for the 313-ship force structure, which is the driving element of the FYDP and the 30-year shipbuilding plan, is not a transformation of the Fleet. A majority of the budget resources available are being applied to new versions of the traditional MCO platforms already populating the Fleet. CVN-21, DD(X), and CG(X) are high technology, advanced designs of the major combatant classes that are today's Fleet workhorses. All will employ next-generation systems to enhance operational capability, however, the platforms and their mission-employment should not be considered transformational.

The chief difficulty with the idea of transformation in the future Fleet is the misconception that the application of new technology is by itself transformational. What is transformation for the Navy? The mission is where transformation impacts the organization. Stealthy ship designs, new radar systems, advanced naval guns, and new missile systems are advances in technology, but do not significantly transform the way the Navy fights, only that systems of today will be improved tomorrow. Even the Navy's emphasis on networked warfare information systems is not truly a change in the way the Navy fights. It merely enhances the capabilities and tactics of warfighting doctrine already being utilized. Aegis, Tomahawk, and precision air-delivered weapons were all technological wonders at the time of their introduction to the Fleet, but none were transformational in the way they affected the mission of the Navy. Similarly, the revolutionary technological advances on the ships of the FYDP Fleet were science fiction a few short years ago, but they do not appear to be a major change to the mission of the Navy.

The DD(X) program is a prime example of a proposed ship that is to be equipped with numerous systems that are the leading edge of technology, but the bottom-line is that for \$3.3 billion, it provides two guns and eighty Vertical Launch System missile cells in the largest surface combatant hull built since the USS *Long Beach* in 1957.⁹⁰ The expense of the DD(X) is out of proportion to what it brings to the Fleet. In the three latest conflicts the U.S. has been involved in (Kosovo, Afghanistan and Iraq), naval gunfire support played no role. The portion of the budget for DD(X) needs to go toward more beneficial Navy procurement.

3. TFC Effect on Stakeholders

Implementation of the TFC and the changes it calls for in the structure of the U.S. maritime forces will have a profound impact on the various DOD, federal agencies, lawmakers and business representatives who are connected to those maritime forces. The TFC will require a change in how some stakeholders look at the structure of the Fleet. Any change to the procurement budget and the types of platforms procured affects not only the end-users in the Fleet, but those who are responsible for providing for the Fleet. Convincing stakeholders of the necessary changes to meet the new environment of the threat and put the Navy on the path to the TFC will be difficult, as evidenced in statements by Congressman Solomon Ortiz (D-TX) concerning funding for the NECC (and the Riverine Group):

“While we encourage innovation, it will not come at the neglect of what makes our nation’s military the best in the world” and “ensures that the Navy will be able to continue meeting its core responsibilities in the defense of our nation.”⁹¹

The Navy’s core force, as noted in Chapter III, has a far greater combat capability today than a larger Fleet of seventeen years ago, yet any change in the force structure is perceived as a negative impact on the Navy’s ability to

⁹⁰ CRS Report RL 32109, “Navy DD(X), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress, Ronald O’Rourke, Congressional Research Service, Mar. 7, 2006

⁹¹ “Lawmakers Debate Future of Navy Expeditionary Combat Command”, Christopher J. Castelli, Inside the Navy, www.insidedefense.com, May 8, 2006 (Last accessed May 2006)

perform its missions. This is readily apparent in the conflicting views that have arisen over the 2006 QDR goal of maintaining the carrier force at eleven. The House Armed Services Committee has taken the 30-year shipbuilding plan's carrier force drop to ten in 2013, then increase to twelve ships after 2018⁹², as a sign that the Navy should not reduce the current force at all and really is signaling that keeping twelve is the number needed for the future. The House committee writes:

It is apparent to the committee that the decision to allow the force structure to fall to 10 in the near future is fiscally rather operationally driven. The committee believes that the Navy should continue to maintain no less than 12 operational aircraft carriers in order to meet potential global commitments. The committee believes that a reduction below 12 aircraft carriers puts the nation in a position of unacceptable risk.⁹³

Change of the force structure will also affect shipbuilding concerns (large shipyards fear losses, while smaller builders anticipate gains). Both industry representatives and Congressional members are protective of the shipbuilding industrial base. The TFC emphasizes a broad base of platforms that will require funding to be taken from some large, traditional vessel programs in order to build the scalable force the TFC calls for. Some funding will have to be distributed to the other agencies connected to the TFC force, which will reduce funding provided directly to the Navy. When a particular type of capability is recommended to address a threat concern, and that capability already exists at some level in another agency, then that agency should receive additional resources necessary to meet the threat.

C. OBSERVATIONS

The Navy's future in the TFC at first appears to represent two opposing themes. First, the TFC calls for the combination of maritime forces from across the DOD and other federal agencies in order to create the scalable force to meet the challenges of the GWOT, in the realm of homeland security and in the arena

⁹² "Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007", Department of the Navy, Feb. 2006

⁹³ "House and Senate Authorizers Debate Plans to Retire Navy Carrier," Christopher J. Castelli, www.insidedefense.com, May 15, 2006 (Last accessed May 2006)

of overseas power projection. Second, in order to contribute a force that satisfies the TFC, the Navy should pursue a transformational structure independently that will enable it to procure and deploy forces across all levels of maritime warfare needs. These two schools of thought exist now, with real tensions between them because of limited resources (i.e. dollars) available to fulfill the capabilities sought. While these two themes seemed to contradict each other, they are in fact complimentary in the context that each must be viewed.

Homeland security of the U.S. is a vast mission task. The maritime forces available to defend the U.S. are many and, under the TFC, would provide the nation with a formidable defense against the multi-level threats that could be positioned against this country. The forces of the U.S. Coast Guard, Customs and Border Patrol (CBP), and other federal law enforcement agencies are equipped and trained for the homeland security mission. They are also complemented by State and local units. The Navy has assets which it can bring to the table to augment the USCG and the other agencies when the threat requires it, however, it is unnecessary for the Navy to duplicate the efforts that are already in place. The TFC brings integrated coordination and planning to the scalable forces that already exist in order to eliminate wasteful overlaps in capability and resources.

The Navy's role in the TFC becomes much different in the forward-deployed defense of the U.S. and its interest. The maritime assets to fulfill the TFC requirement for scalable forces outside of the U.S. will likely be met by a transformed Navy, perhaps drawing on some homeland security assets, such as the USCG or Customs and Border Patrol for assistance. However, current and future global operations demand a Navy force that can fight at the varying levels of threat that is faced. Forces must be of the types to form close ties to our allies and friendly host nations, which indicates that assets like the LCS and riverine forces may have more prominent roles in future mission accomplishment. The force structure of the Navy in the TFC will have to be built to enable combatant commanders to have the options of scalable force, rather than strictly the high intensity power projection force of today.

D. RECOMMENDATIONS

The Total Fleet Concept's effectiveness will rely on presence. Presence means numbers. The TFC Fleet is a fleet that can have assets in place to confront the nation's enemies and assist allies when needed. The Navy of today and the Navy of the FYDP is heavily weighted towards the major capital ships of the Carrier Strike Group and Expeditionary Strike Group structure. The resources currently planned to build the 313-ship Navy may exhaust the Shipbuilding and Conversion, Navy (SCN) account with little flexibility to really transform the Navy. The Navy's ability to fight and win the Major Combat Operations mission must be preserved, but there are options to the future plan that should be considered in order to apply the Navy's budget toward the transformational structure of a TFC-based Navy.

1. Aircraft Carrier Procurement Plan

The QDR⁹⁴ and the 313-ship Fleet plan clearly point out the near-term future aircraft carrier requirement is eleven ships (refer to Chapter III, Table 2). The 30-year shipbuilding plan shows the carrier force growing to twelve ships after 2018 and remaining at that level indefinitely.⁹⁵ This is an unneeded procurement expense and the carrier replacement program schedule should be modified to eliminate this increase. After years of operating eleven carriers as the standard force structure, adding a twelfth unit will carry extremely expensive comprehensive costs (infrastructure regeneration and outfitting a new carrier airwing for the ship) beyond the costs of the carrier itself.

2. Limiting DD(X)

DD(X) should be limited to the two units in the 2007 Budget Request. The two units will serve as prototype technology demonstrators and provide the shipbuilding industry with projects to maintain continuous operation. The DD(X) is too expensive for the benefits it provides the Fleet. Seven units would not provide a significant capability to the Fleet and end up draining the shipbuilding budget. Alternatives to the land attack mission exist in the *Ohio*-class SSGNs

⁹⁴ Quadrennial Defense Review Report, Department of Defense, Feb. 6, 2006, p. 48

⁹⁵ "Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007", Chief of Naval Operations, delivered to Congress on Feb. 7, 2006

and the current CG-52 and DDG-51 classes. During the construction of the two DD(X)s, alternative platform development could be undertaken to deploy the Advanced Gun System on a less expensive platform dedicated to the naval gunfire mission, such as an LPD-17 or a modified DDG-51 hull form, as long as that mission is deemed necessary for support of the Marines. Likewise, a lower cost platform to perform the Tomahawk land attack mission integrated with the DD(X)'s ASW capability could be purchased in numbers significant enough to provide a viable class of ships to the Fleet.

3. Attention to the Littorals

The LCS program is a good start on the transformational type of Fleet assets needed, but the program of littoral combatants should be expanded. A new platform based on a patrol boat design should be incorporated into the Fleet to provide a bridge between the LCS and the true "brown water" assets of the Riverine Group. Re-engineering of a larger *Cyclone*-class (PC) type of vessel with influence from the USCG IDS Fast Response Cutter should be pursued to enable the forward deployed Navy to integrate more effectively with the littoral navies of allied nations and provide a common baseline platform for Navy and USCG training and personnel exchange programs.

The time is still available to leverage the LCS program advancements with the USCG Off-Shore Patrol Cutter (OPC) portion of the IDS. The Navy should investigate the options and benefits of merging its later-years LCS procurement program with the USCG's OPC program in order to maximize the budget savings available to a larger scale common procurement plan. There would be no better way to begin force integration toward the TFC than to have common vessels between the two Services. Should the Navy become more involved in the homeland security mission, a platform with maximum commonality and familiarity with the other agencies involved could enable the Navy to seamlessly integrate into joint training and operations. Navy and USCG Program Executive Offices should also pursue a combination of their procurement programs for the vertical take-off unmanned aerial vehicles (VTUAV) being developed for LCS and for the

IDS (Appendix D, Figure 16). These separate programs are an unnecessary redundancy for projects of similar purpose.

4. Larger Scope Riverine Forces

Procurement for the Riverine Group's assets in the future should become part of the baseline President's Budget rather than in the annual bridge Supplemental Requests. The riverine forces are being established as a permanent standing element within the Navy force structure, therefore it could be seen as a better justified expense (in the eyes of Congress) by being placed within the auxiliary craft section of the Shipbuilding and Conversion, Navy (SCN) account request.

In addition to the actual riverine combat craft, the Navy must plan for the supporting forces to augment the riverine squadrons. A review of the riverine force operations in Vietnam revealed a large array of support vessels necessary to carry out dedicated riverine operations, including larger support vessels and airborne helicopter support.⁹⁶ In order for the new Navy Riverine Group to operate as an effective, autonomous force outside of areas where major U.S. combat operations are underway, it too will require a support infrastructure to be funded. Procurement of shallow-water vessel types like the JHSV or a fully developed platform based on the Sea Fighter (FSF-1) (noted in Chapter II; Appendix D, Figure 8), with logistics and helicopter support capability, would enhance the Riverine Group's ability to sustain their missions.

5. Training and Exercises

The heart of the Total Fleet Concept is the interoperability of all maritime forces. In order to work toward that goal, opportunities where training at the basic operations level can be merged should be sought out. One particular area where a joint training baseline should be pursued is in the area of small boat operations. The re-establishment of the Navy's Riverine forces requires dedicated training in small boat skills and tactics. Many other organizations have small boat forces that require the same training. The USCG operates the Special

⁹⁶ Don Blankenship's Mobile Riverine Force Homepage, www.rivervet.com, (Last accessed Apr. 2006)

Mission Training Center at Marine Corps Base Camp Lejeune, training small boat unit sailors from the Coast Guard, Navy, Marine Corps, and several federal agencies. Current Marine Corps riverine personnel are trained there, although no decision has been made as to whether Navy riverine personnel will follow the same plan.⁹⁷ Training for the Navy Riverine Group should join with the current Special Mission Training Center program rather than set-up a new training center that will likely duplicate a majority of the current USCG program.

Another aspect of moving forward to achieve the TFC operational vision is to enable joint operational exercises between the maritime agencies. The Navy, USCG, Customs and Border Patrol (CBP), and others should coordinate multiple exercises around the U.S. to put the TFC to the test. Navy Riverine Group forces in combination with LCS participation, USCG small boat and cutter forces, CBP and regional agencies should begin conducting homeland security/defense exercises in locations such as the Mississippi river delta, Puget Sound, Potomac River, and various coastal locations. A littoral / coastal aggressor unit should also be formed to add to the complexity and realism of the exercises.

E. AFTERWORD

The challenge for the Navy and the nation as a whole, in the coming 20-30 years will be to manage its assets in order to successfully prepare for known and possibly unexpected threats. The Global War on Terrorism and related Operations Other Than War (OOTW) has placed the Navy into an operating environment that was not envisioned for the Fleet configuration of today. Not only has the type of threat changed, from a predominantly nation-state military adversary to a more elusive, asymmetrical faction-based opponent, but the geographical battlespace has shifted also. The threat that presents itself to the Navy today and very likely into the long-term future is a threat at a level below the Navy's primary asset range.

The scope of defending against the unknown poses considerable challenges. Creating a force that could combat every possible scenario would be

⁹⁷ Phone interview with BMC Basilici, USN, Navy Training representative attached to U.S. Coast Guard Special Mission Training Center, MCB Camp Lejeune, Apr. 11, 2006

expensive. The Total Fleet Concept is a way to leverage the expertise and the assets that the U.S. has already invested in, focus the way that expertise is utilized and create a distributed force that can be expanded or contracted as necessary to meet the threats as they arise.

No organization will ever receive a budget appropriation that covers all the programs and assets that it would desire to meet its mission requirements. The TFC vision of forces will reduce redundant spending and asset procurement, find commonality across the board for training and operations, and focus the resource dollars that each organization has available more effectively on programs that enhance its strengths.

This thesis is a step toward seeing what factors affect the configuration of the Fleet, both today and “the possible” tomorrow. Many areas remain to be explored further as transformation of the U.S. maritime force takes shape in the coming years. Further research on several topics could include deeper study of the budget implications of a reorganization of the U.S. Coast Guard’s missions, with its Homeland Security and Defense missions becoming a branch of the Navy (in the same manner as the U.S. Marine Corps) and its law enforcement and safety functions being separated to a new entity within the Department of Homeland Security, possibly as a branch of the Customs and Border Patrol. Fleet configuration study is also a broad topic for more in-depth examination, especially the cost/benefit to national defense of the mix of platforms now being procured or planned for the near future. Topics such as these call for continuous study in order to provide the leadership of the Department of Defense and the Navy with options they may consider as they make the decisions to shape the future force structure.

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APPENDIX A: THE NATIONAL FLEET POLICY



Department of the Navy
Washington, DC



United States Coast Guard
Washington, DC

NATIONAL FLEET A Joint Navy/Coast Guard Policy Statement

CONCEPT.

In December 2004, the President issued the National Security Presidential Directive (NSPD-41)/Homeland Security Presidential Directive (HSPD-13) which directed the Secretaries of the Department of Defense and Homeland Security to lead the effort to develop a comprehensive National Strategy for Maritime Security (NSMS). In support of these directives, the Navy and Coast Guard commit to shared purpose and common effort focused on tailored operational integration of our multi-mission platforms, infrastructure and personnel. This synergy enables operations across the entire spectrum of America's twenty-first century maritime security responsibilities, from the homeland into the global domain. While we remain separate Services, we recognize that full cooperation and integration of our non-redundant and complementary capabilities must be achieved as noted in existing shipbuilding memorandums of understanding. This continues to ensure the highest level of maritime capabilities and readiness for the nation's security and investment. We describe the process that synchronizes research and development, planning, fiscal stewardship, procurement, development of doctrine, training, and execution of operations as the National Fleet. The result will serve as a force multiplier, as it will allow each Service to leverage the assets of the other by providing unique capabilities in expeditionary warfare and in Maritime Homeland Defense and Security missions with an increased capability to surge during high operating-tempo situations or to respond promptly to time critical events.

BACKGROUND.

Challenges to our sovereignty and maritime security mandated the formation of our respective Services in the early years after the founding of the Republic; the challenges grow more diverse and complex each year. Regional conflict, crisis response, sanctions enforcement, arms trafficking, weapons proliferation, illegal mass migration, smuggling, natural resource depletion, force protection, weapons of mass destruction, and terrorism are just some of the growing challenges we face in maritime security. As discussed in the NSMS, "Defeating this array of threats to maritime security – including the threat or use of weapons of mass destruction (WMD) – requires a common understanding and a joint effort for action on a global scale." The Navy and Coast Guard must be able to deploy forces with greater agility, adaptability, and affordability across the full spectrum of conflict. A joint and interoperable maritime force is needed to establish the numerical sufficiency required for effective global operations and to effectively foster and leverage regional international partnerships in order to achieve global maritime domain awareness and maritime transportation security in the era of globalization.

Our long history of successful cooperation at sea establishes a clear basis to build upon our relationship as we develop a new course for the future. Recent examples of this cooperation include expeditionary force protection in the aftermath of the terrorist attacks on USS COLE, response to the 11 September 2001 terrorist attacks on the United States, support of Operations Enduring and Iraqi Freedom, conduct of Indonesian Tsunami Relief and Hurricane Katrina relief efforts in 2004 and 2005, and ongoing peacetime engagement and counter-narcotics operations. In support of the Coast Guard's counter-narcotics and homeland security missions, the Navy brings essential communications, intelligence, surveillance, detection, and sea-control capabilities. In the Navy's peacetime engagement, maritime interception operations, and force-protection missions, the Coast Guard provides platforms and personnel with expertise and proficiency in maritime law enforcement, waterways management, natural resources protection, port security, and maritime environmental response and protection. In intelligence and humanitarian support operations, the Services support each other with a common dedication and complementary skill sets that are force multipliers for the nation. Our joint operational experience suggests that there are opportunities to attain greater efficiencies and achieve increasingly effective operational outcomes by pursuing integrated and interdependent strategies. As partners in globally networked maritime security and in the interest of fiscal responsibility, we should consistently pursue complementary and interoperable approaches wherever appropriate and as permitted under existing statutory authority.

ATTRIBUTES.

The National Fleet has three main attributes. First, the Fleet is composed of ships, boats, aircraft and shore Command-and-Control nodes that are affordable, adaptable, interoperable, and possess complementary capabilities. Second, these forces will be designed, wherever possible, around common command, control, and communications equipment and operational, weapon and engineering systems, and include coordinated operational planning, procurement, training and logistics. Third, the National Fleet will be capable of supporting the broad spectrum of national security requirements, from power projection to security and defense of the homeland. The Navy's contribution will be highly capable, multimission ships, submarines, and aircraft, as well as Naval Coastal Warfare, Naval Special Warfare, and C4ISR assets designed for the full spectrum of naval operations, from peacetime engagement through Global War. The Coast Guard's contribution will be statutory authorities, multimission cutters, boats, aircraft, and C4ISR as well as law enforcement and environmental response teams designed for the full spectrum of Coast Guard missions, including maritime security operations, counterterrorism crisis response, and filling the requirements for general purpose warships mandated by Combatant Commander theater plans. The Coast Guard will also provide Port Security Units and personnel to support the Naval Coastal Warfare mission area. All ships, boats, aircraft, and shore Command-and-Control nodes of the National Fleet will be interoperable to provide force depth for peacetime missions, homeland security and defense, crisis response, and wartime tasks.

NATIONAL FLEET BUDGETING PROCESS

The Coast Guard and Navy funding and programming initiatives require close coordination to ensure that both Services are adequately funded to carry out their missions. These areas include operating expenses, acquisitions, equipment maintenance funds, active and reserve training funds, sea service compensation issues and specific supplemental funds for contingency

operations. Coast Guard and Navy resource managers will consider the objectives of the National Fleet during budget preparation in areas that mutually support and complement each Service's roles and missions. The use and reuse of commercial-off-the-shelf and government-off-the shelf (COTS/GOTS) equipment and fielded maritime systems are being maximized for USN/USCG commonality and interoperability. The application of COTS permits the services to take advantage of the rapidly changing commercial market place and the investments which commercial firms make in their best of class technologies. By using COTS, the National Fleet can improve its interoperability with civil and international partners; a key consideration given the range of maritime challenges.

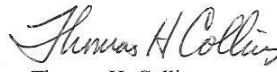
Distinct shipbuilding programs provide substantial advantages to the future security of our nation by maintaining a strong and stable shipbuilding industry. Diversified shipbuilding programs support the industrial base by spreading construction to different shipyards. Work force skill base is enhanced by construction of distinct designs promoting well-rounded expertise in small combatant construction. These distinct designs also improve the likelihood of follow-on construction for export. Higher-end capabilities (e.g., LCS) are appropriate for more developed navies seeking power projection forces; lower-end capabilities (e.g., Deepwater Program) are suitable for coast guards or navies performing maritime law enforcement, coastal defense, and resource protection missions. This approach to recapitalization satisfies each Service's unique mission requirements, provides economies of scale, maximizes performance and value at the system and sub-system level, enhances interoperability between the platforms and services, and provides a variety of ships for export fostering international partnerships and further cooperation in the Global War on Terror.

POLICY.

The Navy and Coast Guard leadership will continue to work together to plan and build a National Fleet of multi-mission assets, personnel resources and shore Command and Control nodes to optimize our effectiveness across the full spectrum of naval and maritime missions. The Navy and Coast Guard will coordinate, to the extent permitted under existing statutory authority, research and development, acquisitions, information systems integration, resourcing, force planning, as well as integrated concepts of operations, intelligence and information, logistics, training, exercises, and deployments. The Coast Guard and Navy will work together to plan, acquire and maintain forces that mutually support and complement each Service's roles and missions. Where appropriate, multiservice facilities and support arrangements will be used. America's National Fleet continues to serve as the model for world navies, coast guards, and maritime forces and is vital to promoting the interservice, interagency, and international cooperation and partnerships necessary to secure the global commons.



Michael G. Mullen
Chief of Naval Operations



Thomas H. Collins
Commandant of the Coast Guard

Dated:

MAR 03 2006

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APPENDIX B: LITTORAL COMBAT SHIP MISSION BREAKDOWN

Examples of Littoral Combat Ship Missions	
Focused missions	Examples of tasks
Littoral mine warfare	<ul style="list-style-type: none"> • Detect, avoid, and/or neutralize mines • Clear transit lanes • Establish and maintain mine cleared areas
Littoral antisubmarine warfare	<ul style="list-style-type: none"> • Detect all threat submarines in a given littoral area • Protect forces in transit • Establish antisubmarine barriers
Littoral surface warfare	<ul style="list-style-type: none"> • Detect, track, and engage small boat threats in a given littoral area • Escort ships through choke points • Protect joint operating areas
Inherent Missions	
Battle space awareness	<ul style="list-style-type: none"> • Intelligence, surveillance, and reconnaissance
Joint littoral mobility	<ul style="list-style-type: none"> • Provide transport for personnel, supplies and equipment within the littoral operating area
Special operations forces support	<ul style="list-style-type: none"> • Provide rapid movement of small groups of special operations forces personnel • Support hostage rescue operations • Support noncombatant evacuation operations • Support and conduct combat search and rescue
Maritime interdiction/interception	<ul style="list-style-type: none"> • Provide staging area for boarding teams • Employ and support MH-60 helicopters for maritime interdiction operations • Conduct maritime law enforcement operations, including counternarcotic operations, with law enforcement detachment
Homeland defense	<ul style="list-style-type: none"> • Perform maritime interdiction/interception operations in support of homeland defense • Provide emergency, humanitarian and disaster assistance • Conduct marine environmental protection • Perform naval diplomatic presence
Antiterrorism/force protection	<ul style="list-style-type: none"> • Perform maritime interdiction/interception operations in support of force protection operations • Provide port protection for U.S. and friendly forces and protection against attack in areas of restricted maneuverability

Source: GAO from U.S. Navy sources.

Source: GAO Report, GAO-05-255, "Defense Acquisitions: Plans Need to Allow Enough Time to Demonstrate Capability of First Littoral Combat Ships", March 2005, p. 6.

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APPENDIX C: INTEGRATED DEEPWATER SYSTEM CUTTERS COMPARED TO LITTORAL COMBAT SHIP

COMPARATIVE REVIEW OF IDS CUTTERS AND NOTIONAL LCS

Characteristics	NSC	OPC	Notional LCS
Length Overall	418'	360'	400'
Beam	54'	54'	45' – 90'
Draft	21'	20'	14'
Displacement	4300 LT	3715 LT	3000 LT
Speed	28 kts	25 kts	50kts
Maximum Range	12,000 NM	9,000 NM	4000 NM
Endurance	60 days	45 days	30 days
Propulsion	2 Diesel Engines, 1 Gas Turbine	4 Main Diesel Engines	2 Diesel Engines and 2 Gas Turbines
Gun	57MM Gun with SPQ-9B radar targeting	57MM Gun with optical targeting	57 mm with radar; RAM SAM system
Crewing	106	102	75
Flight Deck Capability (Launch and Recover)	USCG (VUAV, HH-65, MCH), Customs, DoD, and NATO (up to H-60 Aft Wheel Variant) if equipped with compatible Aircraft Handling System Gear	USCG (VUAV, HH-65, MCH), Customs, DoD, and NATO (up to H-60 Aft Wheel Variant) if equipped with compatible Aircraft Handling System Gear	MH-60s and/or VTUAVs
Boats	2 LRI/SRP in any combo Stern launch - 1 person	2 LRI/SRP in any combo Stern launch - 1person	Unmanned remote RHIB/Remote subsurface vehicles
C4ISR	Current C4 Design Increment plus Excomms Phase I & II	Current C4 Design Increment plus Excomms Phase I & II	USN C4ISR standard

Source: United States Coast Guard website, www.uscg.mil and LCS data referenced from General Dynamics and Lockheed Martion websites, www.gdlcs.com and www.lmlcsteam.com (February 2006)

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APPENDIX D: PLATFORMS OF THE TOTAL FLEET CONCEPT

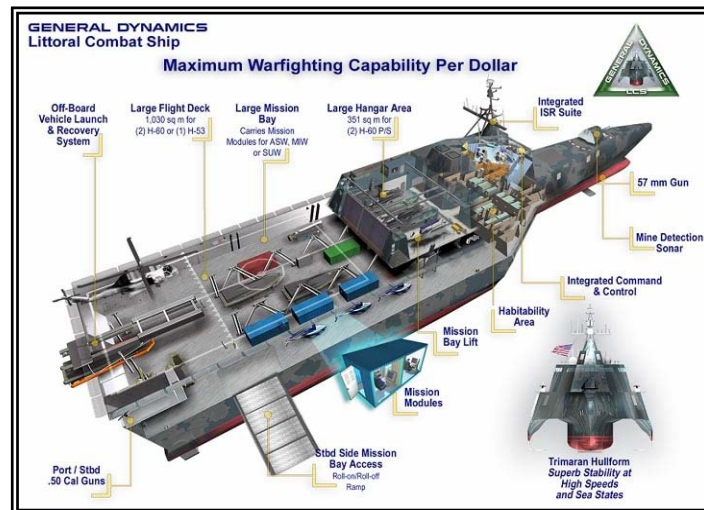


Figure 4. General Dynamics Littoral Combat Ship



Figure 5. Lockheed Martin Littoral Combat Ship



Figure 6. Prototype Joint High Speed Vessels: *Joint Venture* and *Spearhead*

National Security Cutter



Off-Shore Patrol Cutter



Fast Response Cutter



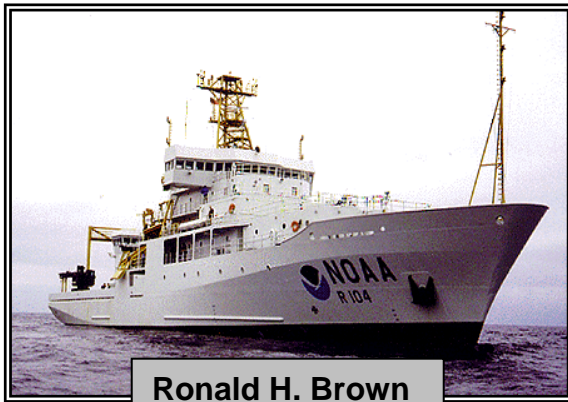
Figure 7. Integrated Deepwater System Surface Vessels



Figure 8. Sea Fighter (FSF-1) Littoral Surface Craft



Figure 9. DD-1000 Zumwalt-class, aka DD(X)



Ronald H. Brown



Oscar Dyson

Figure 10. NOAA Ships Ronald H. Brown and Oscar Dyson



Figure 11. Riverine Assault Craft (USMC)



Figure 12. Customs and Border Patrol Craft; left – Safe Boat (used by USCG & CBP); right – CBP Midnight Interceptors & UH-60 Blackhawk



Figure 13. *Cyclone*-class PC boat



Figure 14. Lewis and Clark class T-AKE 1



Figure 15. Special Operations Forces Mk V boat



Figure 16. Vertical Take-off UAVs (VTUAV); left – USCG HV-911 Eagle Eye; right – Navy MQ-8B Fire Scout

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